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AUTHOR Meyers, Judith K.
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ABSTRACT

The first of two documents combined here provides a list of 105 computer awareness activities designed for use by classroom teachers in conjunction with the regular curricula. Activities appropriate for all grades are presented; wherever possible, the activities are described in their simplest forms, with the intention that they can be made more complex and sophisticated for the older student. The second document, a detailed computer curriculum, provides plans for 12 lessons on computer awareness for elementary school children. The first two lessons are aimed at primary students and cover how to operate the computer in learning resources centers. Five lessons for the fourth grade and five for the fifth grade provide more detail on the parts of the computer, the functions of a computer, simple computer programs, and computer careers. The lessons are designed to be taught by media specialists, and most activities can be conducted in learning resource centers. Specific instructional materials accompanying the curriculum guide include worksheets, quizzes and answer keys, transparencies, and flashcards on vocabulary and hardware and software. (LMM)

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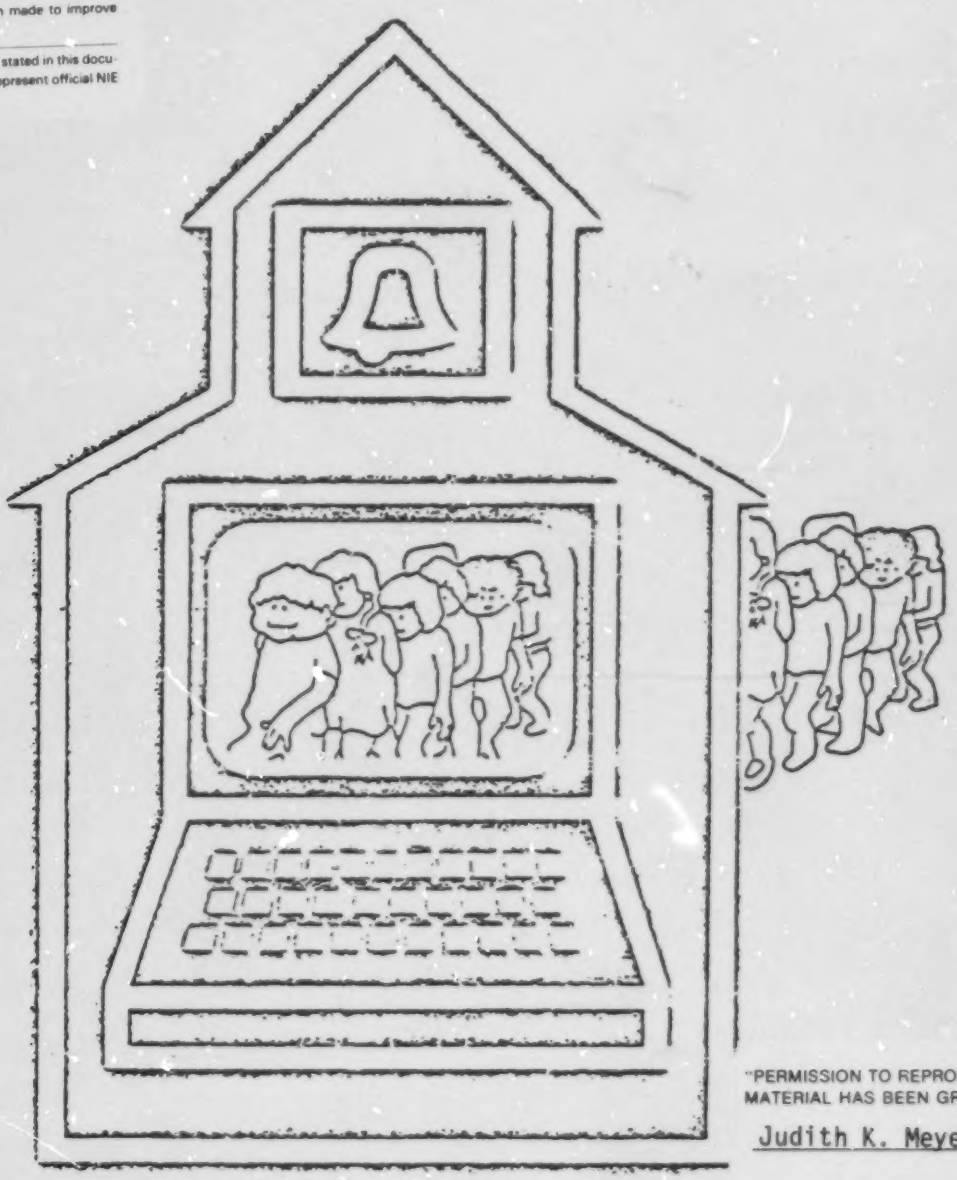
COMPUTER AWARENESS ACTIVITIES



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1470 Warren Road
Lakewood, Ohio 44107
(216) 529-4090

Dr. Judith K. Meyers
Coordinator of Media Services
January, 1984

COMPUTER AWARENESS ACTIVITIES

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INTRODUCTION

This list of computer awareness activities is for classroom teachers to use in conjunction with the regular curricula. It includes activities appropriate for all grade levels. Wherever possible the activities have been described in their simplist form, with the thinking that they can be made more complex and more sophisticated to appeal to older students more easily than they can be simplified for younger students.

Thanks to Jan Casey, Mary Weaver, Dick Dutro, and Jerry Martau for contributing some of the ideas, reviewing the manuscript, and making revisions.

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Judith K. Meyers
Coordinator of Media Services

Lakewood City Schools
1470 Warren Road
Lakewood, Ohio 44107
(216) 529-4090

January 11, 1984

COMPUTER AWARENESS ACTIVITIES

1. Have the class share stories about the problems their families have experienced with computers.

2. Clip pictures of computers. Arrange them in a collage for a bulletin board or a poster board.

3. Keep a list of words that are related to the computer. Make a set of flash cards with the new vocabulary words on one side and the definitions on the other. Have the class make up games using the cards.

4. Ask students to collect advertisements of computers. List the computer applications promoted in the advertisements. Try classifying the applications in several ways. Discuss the appeals and promises made in the ads. Compare the ads for computers to ads for other products - perhaps sugar coated cereals or toothpaste.

5. Ask students to bring in their own computer toys and those of their brothers and sisters. Develop a display and series of learning and experimenting centers with the collection. Let students work independently in the learning centers for a few days.

6. If you get multiple sets of toys, organize the class into small groups and develop a competition among the groups to see who can most successfully manipulate the toys - i.e., have the toy mice, cars, robots, or whatever run identical mazes and see which team's toy runs the maze the fastest.

7. Have class members write to various computer firms for literature on their computers. Share the responses among the class.

8. Have a computer puppet play about a gang of mischievious computer kids. Design and construct the puppets out of paper bags, sticks, papier-mâché, soft sculptures, cardboard, hand, shadow, socks, and other materials. Produce the play and present it to a parent or other group. Consider video taping the play.

9. The current research suggests that girls have poorer attitudes about learning from and about computers and using them than boys. Why do you think this might be? Design a survey to see if this finding pertains to your class or your school. Think of ways to help girls improve their attitudes toward computers. Divide the girls into several groups and experiment with your ideas. Take the survey again. See if the attitudes changed. Were they for the better or worse?

10. Make a model to show your students how a computer works. Use either adding machine tape or shelf paper, an extra spool for winding them, and either a shoe box or a cardboard carton. Cut two parallel slits in the box. Divide the paper by folding or by drawing a line into about the same number of segments as there are students in the group. Draw a "magic eye" on the front of the computer. Punch a hole big enough to see through in the place where the pupil should be. Develop a simple binary question. Ask all the boys to color in a square with magic marker. Or all the blue-eyed students. Or all the students who cleaned up their plate at noon hour. Run the paper from one spool, through the slits to the other spool. (You don't have to wind if you don't wish.) Ask the students to observe as the computer's magic eye counts all the items.

11. Use a set of 3 x 5 cards, a hole punch, and a knitting needle to demonstrate the same concept. Try to get the class to see that a roll of paper is the same as a bunch of cards attached to one another, and that a computer disc is the same as a long roll of paper coiled up. Coil up enough of the paper to show how much more information you can store on a disc than in a cassette.

12. Put together a great class literary effort entitled Computer Mania or a better title of your own choice. Include all kinds of literary efforts, a sample from each child, about computers - prose, poetry, short stories, essays, fiction, non-fiction, cartoons, graffiti, and what have you. Bind it nicely and present it to the school library when you have finished.

13. Use clay, plasticene, papier-mâché, aluminum foil, pipe cleaners, wire, dough, sawdust, vermiculite, plaster of Paris, sandcasting, styrofoam, toothpicks, popsicle sticks, natural materials, plaster, or soap to model or sculpt a computer inspired work of art. Perhaps a line of ceramic desk accessories for the computer office could be developed - coffee cup, paper clip holder, pencil holder, and so forth.

14. Have the children design a computer alphabet. See if they can make their own computer ABC book. When they have finished their first book, let those who are inspired to do so work on a computer counting book. Share the books with other students by placing them in the school library.

15. Find out how many of the student in the class have seen War Games. Discuss how the hero of this movie used and misused computers.

16. Make a computer drawing or painting with chalk, pencil, crayon, felt pen or brush.

17. Construct a classroom "computer" out of wood, paper, cardboard, and other scrap materials. Have the students submit their personal problems to it. Determine which problems a computer can help solve and which it cannot.

18. Consider the various kinds of handicaps which children in your school and elsewhere have. Study about ways in which computers are being used to help people with handicaps. Make reports on the topic. Perhaps you will be able to find a handicapped person who uses a computer to overcome his or her handicap who will demonstrate it to your class.

19. Can computers be harmful to one's health? Do they cause eye strain? What happens to one's posture when seated at a computer for extended periods of time? What about possible radiation? Do you think computers contribute to weight loss or gain? What is the best color for a computer screen? How long should one work at a computer console without a break? Discuss these and other health issues with your class after they have tried to find information about them. Ask the class to propose some laws or regulations with respect to computer use and manufacture. If they do a good job, send your recommendations to the appropriate lawmakers.

20. Get the story behind the Cleveland Indians computerized scoreboard. Also, look into how favorite sports teams use computers in scouting and/or developing game plans.

21. Check your regional film library, the local public libraries, and other educational film libraries for appropriate computer films to share with your class.

22. Get your class to brainstorm ways of getting additional computers for students in your school. Share the more promising ones with the coordinator of media services.

23. Be alert for computer documentaries and specials on commercial television. Bring these to the attention of your students. Assign some of them for special viewing, reporting, and discussion.

24. Assign class members to read the report about the development of the typewriter keyboard and the various schemes for improving it and computer keyboards. Discuss whether you think the current keyboard will ever be replaced. If so, how might this change come about. Design your own computer keyboard.

25. Interview some of the community helpers and find out how many of them work with computers, how computers have changed their work, or how computers have otherwise influenced their field.

26. Share information about the computer section of the Ohio Student Educational Media Contest with your class. Encourage them to submit their computer entries, or other media about computers which they have developed in conjunction with their computer awareness activities. Be alert to other computer contests which your students might enter.

27. Arrange a trip for some of your students to Lorain Community College to see their new computer equipment used in engineering applications.

28. Send another group to a local bank or savings association.

29. Have a group take a trip to City Hall to see how computers are used in running the city and its services.

30. Include a small group who visits a large city newspaper to explore how computers have changed the newspaper business.

31. Send a group of students to WVIZ or one of the commercial television stations to observe how computers are used.

32. Compare what this group finds with what a group you send to a radio station finds. How are satellites going to change the picture even more?

33. Let other groups call on businesses in your school neighborhood and discover how computers are being used in their operations.

34. Send a small group to visit the public library and report on how their staff is using computers in their work.

35. Have one of the groups visit the airport to investigate the computer applications being made there.

36. Arrange for another group to visit a nearby travel agency to see how computers are used in making travel arrangements for people.

37. Have the students take the school camera with them on their field trips and document their findings with photographs or slides. Use the photographs to put together a scrapbook or narrative report of their findings or a slide show about computers in the community.

38. Think about developing a cable television segment from your findings. Include on-site interviews with local residents and business persons in your clip.

39. Start a computer club for your school.

40. Make up a list of class or school problems, community problems, state or national problems, world-wide problems. Discuss how computers might be used to solve these problems. What other problems might the computers create?

41. Borrow the learning resource center's collection of computer software catalogs. Ask the students to browse through them and make a list of the programs they think they would like for their school.

42. Provide the class with a set of computer hardware catalogs. Let them pick out a set of components that they might like for a home computer center, a classroom computer center, a school computer lab, or a similar project. Include a scale drawing of how the components would be arranged. Take interior design and decorating principles into consideration. Make a three-dimensional model of the computer area. Complete sample order forms for the equipment. Think about submiting entries to Home Improvement Contests.

43. Rent a film or video version of the movie Tex and show to your class. Find out how computers were used in the production of this film.

44. Have students select a computer career for in-depth exploration. Encourage them to develop a parody on "Me and My Amazing Computer Career".

45. Make some classroom mobiles out of pictures of computers suspended from coat hangers.

46. Borrow the learning resource center's collection of books and audio-visual materials catalogs to share with your class. Identify materials the class believes it might wish to review or preview. Arrange with the media specialist for the class to evaluate these materials and make recommendations with respect to their possible purchase for use in the schools.

47. Look up the number of listings under computers in the yellow pages of the phone book. Have members of the class write or phone to the companies inquiring about the goods and services they provide. Invite some of their representatives to come to class and tell about the products and services they offer.

48. Discuss whether a computer is a living or non-living thing. Do computers need a special kind of environment in which to function? What would happen if computers were exposed to weather, air, and water? How might changes in the seasons affect computer operations? Do night and day make a difference? How about hot and cold?

49. Compute the cost of operating the school's computer for 15 minutes, an hour, a day, a week, a month, a year.

50. Encourage students to enter some of their computer art in the Children's Art Calendar Contest, the Scholastic Art Contest, and others.

51. About 15 years ago a professor at Harvard University wrote a book called Run, Computer, Run in which he predicted the changes the computer would make in our schools. Ask your school or public librarian to procure and review this book for the class. (Older students might enjoy doing the reviewing themselves.) How much of what was predicted so long ago has come to pass? What things haven't happened? What are some of the things which have happened that the college professor did not foresee? Why do you think the changes occurred in these ways and not others?

52. Study all the pictures of computers you have gathered. How many sizes, shapes and colors can you find? Do they have different textures? What kinds of sounds do they make? Do they smell? Discuss the similarities and differences you discover.

53. Take an inventory of the class hobbies. Brainstorm about how the computer might be applied to each of the hobbies.

54. Rent a film or video version of the movie Tron and show it to your class. Find out about how computers were used in making this particular film.

55. Decorate your school or classroom with computer-related ornaments and displays for one of the holiday seasons. If you choose the winter holidays, enter some of your ideas in the Garden Center Christmas Contest.

56. Encourage students to browse through the computer section of the public library and borrow materials from there not available through the school's learning resource center. Remind them not to forget the periodical area, the recording collection, and the vertical file collection.

57. Express your artistic ideas about computers in some form of fiber art - banners, clothing, furnishings, batik, macrame, stitchery, weaving, a computer doll, a set of computer dust covers, or some other appropriate fiber work.

58. Be on the alert for news stories involving computers. Ask children to share news about computers they hear on the radio and watch on TV. Clip computer items from the newspapers and post them on a bulletin board.

59. Encourage some of your electronic whizzes to make a robot.

60. Discuss whether the computer is a machine. If so, which of the basic kinds of machine? Study the way your school computer and peripheral equipment are wired together. See if you can determine the flow of electricity through the machines. Is the electricity flow the same as the information flow?

61. What is computer phobia? Who tends to get it? What advice would you give these people? What activities would you design for them to overcome this situation?

62. Make a computer joke book out of cartoons clipped from newspapers and magazines. Bind the book attractively and deposit it in the school library for all students to enjoy.

63. Arrange a visit to Lakewood High School for a demonstration of the Ohio State Career Information Service (OSCIS), the computer lab, and the computers in the math and science areas, and the business education department.

64. Ask students to keep a record of homework assignments for a week or so. Have the class work together in small groups to figure out ways a computer might help them do their homework quicker, make it more interesting or exciting, extend or apply what they have learned.

65. Collect some of the waste products of computers - used printouts, label backings, discs, tapes, and so forth. Make a list of ways these materials might be recycled.

66. Compile a class list of all the ways to learn more about computers in and near your community. Let each student choose his or her preferred way of learning and explain the choice.

67. Look around your classroom. Identify several familiar objects - books, desks, flag, clock, and so forth. How might computers have been used to manufacture these objects, procure them, and disseminate them to your classroom. The class could be divided into several small teams to work together on this project. They could compare and challenge one another's lists.

68. Locate a discarded manual typewriter and a touch typewriting manual. Place them in the corner of your classroom. Let students practice there on developing their keyboarding skills.

69. What parts of the body are used in operating computers? What does each part do? What kinds of movements does the body make? Are the movements rhythmic? How fast are the movements? How strong are the movements? How much space do the movements require? Where do the movements take place in relation to the computer? To other individuals? Pantomime some of the movements. Do people who work with computers need to cooperate with each other in order to be successful? Explain your answers.

70. Have the class identify their favorite video games. What features about the games do they especially like? Ask them to make up games with these features that might be programmed for a computer to help them learn some of the objectives in their courses of study. What are some of the differences between video games and other applications of the computer?

71. Assume you are in the market for a personal computer. What would you do with your computer? Where would you go for information about computers? What are some of the kinds of computers you might choose from? What kinds of peripheral equipment might you wish? What other factors would go into your choice? How would you pay for your computer? Would you insure it?

72. Plan a Computer Day for your school cafeteria. Pick out a balanced menu. Give the dishes you select computer-related names. Figure out how food service workers might dress up or otherwise participate in the fun. Make up a computer handout for the students. Share your ideas with the coordinator of food services and work with him or her to implement it if he or she thinks that is possible.

73. Help students identify the common feelings people have about computers. What are the characteristics that help them apply computers in daily problem solving? Use role-playing to bring out possible reasons for and the strategies for coping with specific feelings brought to the surface.

74. Let each member of the class choose a business and explain how computers are involved in the marketing, planning, designing, manufacturing, selling, promoting, accounting for the proceeds of the enterprise, and other aspects of the business.

75. Everyone has 24 hours a day in which to live. Have members of the class make up charts showing how they spend their time. How much time do they currently give to computer-related activities? How much do they think would be desirable? What activities would they give up or trade off in order to work on their computers? How could they save time in fulfilling their present responsibilities by applying the computer? Compare and discuss the charts.

76. Read a science fiction novel or story. Tell how the computers figured into the setting and plot.

77. Assign some individual social studies reports on: The Influences of the Computer on the Transportation Industries; Robotics; Computers in the Communications Industries; Computer Graphics; Uses of Computers in Preparing and Writing Reports; How are Computers Revolutionizing Manufacturing; Use of Computers in the Various Branches of Government; Computers and Privacy; Computers and Copyright; How are Computers Contributing to Archaeology; Computers and Anthropology; How Computers are Used in Sociology; Computers in Economics; Computer Crime.

78. List and discuss socio-economic factors that affect computer utilization in our nation and world. Are these differences likely to bring nations closer together or make them more divisive? What are your reasons for thinking this way?

79. Make a list of all the books and other materials on computers you can find in your school library. Divide the list up among members of the class. Have individuals and groups review all the materials. Work together with the school librarian on compiling a handsome annotated bibliography to share with other students in your building.

80. Pick out a few key computer companies. Trace their ups and downs in the stock market over a period of time. Consult the Wall Street Journal, Business Week, Forbes, Moody's, Standard and Poor's, and other major business publications. See if you can find some major trends in the computer industry.

81. Review some of the basic human needs. Use Maslow if you like. Guide the class in discussing how computers can be used to help human beings meet these needs. Do computers enhance our sense of responsibility, respect, politeness, courtesy, pride and sharing in being human beings? Do they require more or less cooperation among individuals?

82. Have each child explore a possible career for himself or herself. As part of the investigation, include the possible applications of the computer in the selected career.

83. Think about communications. How have computers facilitated communications? What problems do they cause with communications? Do the advantages outweigh the disadvantages?

84. Consider some of the major events in our country's history. Imagine how that event might have been different had the computer been there. Have the students write their versions of "The Computer Was There...":

When Columbus Discovered America
At the Salem Witch Trials
At the First Thanksgiving
When John Alden Proposed to Priscilla
When Washington Crossed the Delaware
On Paul Revere's Ride
When Betsy Designed Our Flag
During the Winter at Valley Forge
When Benjamin Franklin Discovered Lightening
In Thomas Jefferson's Bedroom
At the Battle of Gettysburg
And so forth.

85. Discuss how the world has changed since the advent of computers. Predict how the world will be different in five and ten years from now, as a result of computers. Ask the class how they are already using computers in their personal lives. What would they do with a computer if they had one of their very own?

86. Think up a computer service your class could develop and market as an economics education project. Form your own company and sell stock in it. Develop and market your service. Share the profits and losses.

87. Go through your collection of pictures of computers. Interpret what is going on in the picture, either orally or in writing.

88. Have a committee make a report on the history of the computer. Construct a timeline based on the findings.

89. Look through your school library's encyclopedias, almanacs, yearbooks, other reference books and non-fiction books to locate diagrams, charts, and graphs about computers. Take slides or make transparencies of the data. Make up sets of questions that members of your class can answer about the information you have located.

90. Make a study of everyone using the computer in your school over a period of time. Draw a map of the most often used routes through the school to the computer.

91. Write a set of simple directions guiding the child from your classroom to the school computer. Give each child a chance to follow these directions. Let the children add to and change your directions, as necessary. For more advanced classes, let each child write his or her own set of directions and exchange them with a partner.

92. Through the years the discovery or invention of selected machines or processes have had dramatic effects on how we live - fire, agriculture, printing press, steam engine, assembly line, automobile, television, and so forth. Find out what some of these changes were. Compare them to the changes that computers are making in our lives.

93. See if you can locate someone to demonstrate the computers used to translate one language to another. For what languages are these computers available? What are some of the reasons you think this is so? What are some of the similarities among the countries? What are the differences?

94. Draw maps of your home, school and community. Show where computers are located on each of the maps. See if you can find some statistics regarding computers in other parts of the world. Draw a map or chart based on your statistics.

95. Assign some individual science reports to members of the class: Computer Applications in Weather Forecasing; How Computers are Used in the Earth Sciences; How Computers are Used in Astronomy; Computer Applications in Agriculture; Computer Applications in Food Processing; Computer Applications in Biology, Botany and Zoology; Computer Applications in Space Travel; Computer Applications in Medicine; Computer Applications in Oceanography.

96. Find out how much energy your school computer uses. Compare it to the energy used by other items around the home and school - lights, audiovisual equipment, stoves, refrigerators, irons, television sets, clocks, radios, and so forth. Make a chart or graph showing your comparisons. Put your work on a transparency and share it with your class.

97. Ask each child to interview his or her parent(s) about computers in their work. Do any of them work directly with computers? What do they do? If they do not work directly with computers, ask them how computers may have changed or influenced their jobs.

98. Write a mystery or detective story involving computers. Turn your story into a drama. Make a video tape recording of your work.

99. Make up a computer fable, fairy tale, myth, or legend. Turn your story into a filmstrip or slide/tape production.

100. Listen to some computer music. Compare it to traditional music. Try to find examples of computer compositions in the styles of traditional composers.

101. Have the class write a poem about computers.

102. Set the poem to music. Experiment with both traditional and non-traditional sounds to accompany the composition.

103. Make up a dance about a computer. Perform it to the music you have just composed.

104. Have students read about some of the various computer languages (BASIC, LOGO, COBOL, etc.) and prepare a report discussing advantages and disadvantages.

105. Plan a party with a computer theme. Use the computer for the invitations, food, favors, entertainment, and so forth. Put on your party for another class, some of the people who have helped you learn about computers, parents, a group of senior citizens, a group of pre-schoolers, or another group of your choice. Relax to the max and enjoy yourself. If you've implemented a wise selection of these ideas in your classroom, you have done an excellent job of carrying out a computer awareness program for your students. Bask in your reward.

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Lakewood City Schools
Instructional Materials Center
Software Evaluation Form

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Section 1: Identification and Description

Author: _____

Title: _____

Publisher: _____

Copyright: _____ Medium _____ Cost: _____

Format: ____Apple II ____TRS 80 ____Commodore 64 ____Other _____

Grade Level: Pre K 1 2 3 4 5 6 7 8 9 10 11 12 In-Service Adult Adult-Basic

	Not Applicable	Poor	Fair	Good	Excellent
Section 2: Instructional Design Overall rating of stated objectives, pre-requisite skills, presentation logic, tests, difficulty, readability, feedback, learner involvement, educational significance, use of medium, relevance, applicability, and field testing.	0	1	2	3	4
Section 3: Content Overall rating of accuracy, validity, bias, grammar, spelling, and punctuation.	0	1	2	3	4
Section 4: Student Use Overall rating of ease of use, directions, learner control, support materials, motivation, creativity, performance summary, and social characteristics.	0	1	2	3	4
Section 5: Teacher Use Overall rating of management, record keeping, teacher manuals, curriculum integration, aid to instructor, and adaptability.	0	1	2	3	4
Section 6: Presentation Overall rating of graphics, animation, color, sound, peripherals, and screen display.	0	1	2	3	4
Section 7: Technical Aspects Overall rating of bugs, response judging, timing, portability, and technical documentation.	0	1	2	3	4

Over, please

	Poor	Fair	Good	Great
Section 8: Ohio Minimum Standards				
In keeping with district philosophy, policies, and goals.	1	2	3	4
Appropriate to ages, interest, and needs.	1	2	3	4
Without bias--color, national origin, race, sex.	1	2	3	4
Experimental in nature.	1	2	3	4
May be used with educational options.	1	2	3	4

May be integrated with objectives in _____ course(s) of study.

May be integrated with competency based education program in _____English Composition, _____Mathematics, or _____Reading.

Section 9: Reviews

_____SLJ	_____Instr.	_____MECC	_____BkRpt	_____EdTech
_____Hornbk	_____CCPL	_____NCTM	_____ComTchr	_____ElecLearn
_____Bklist	_____LEEMC	_____EPIE	_____Forecast	_____Channels

Other_____

Section 10: Recommendation

_____Recommend for general duplication among all schools for use in the appropriate subject(s) and grade level(s).

_____Recommend for limited duplication among schools that select it.

_____Recommend for purchase by IMC only.

_____Appropriate, but do not recommend at this time.

_____Recommend for purchase by private individuals or other agencies.

_____Defer judgement.

_____Other_____

Reviewer:_____

School:_____Date:_____

Comments:

Partially based on: Robyler, M.D., "What You Should Know About Computer Software Evaluations," Executive Educator, September, 1983, pp. 34-39.

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COMPUTER CURRICULUM

K-5

Lakewood City Schools

COMPUTER CURRICULUM K-5

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FOREWORD

This is a set of twelve lessons on ccmputer awareness for elementary school children.

The first two lessons are to be taught at the primary level. Their purpose is to teach young students how to operate the computers in our learning resource centers.

There are five lessons for the fourth grade and five lessons for the fifth grade. These go into a bit more detail on the parts of a computer, the functions of a computer, simple computer programs, and computer careers.

The lessons are to be taught by the media specialists. Most activities can be carried out in the learning resource centers.

Judith K. Meyers
Coordinator of Media Services
August, 1983

ACKNOWLEDGEMENTS

Thanks to Jan Casey and Mary Weaver for the major work in preparation of this curriculum guide. Monica Ilas, Gloria Lloyd and Betsy Reed, elementary media specialists, helped field test the work.

Dr. Richard Dutro and Dr. Gerald Martau provided many suggestions for what should be included and how it might be presented.

Dr. Judith Meyers edited the work.

Illustrations were provided by Maureen Canning.

OBJECTIVES OF K-5

COMPUTER CURRICULUM

1. Students will be able to use the computer for computer assisted instruction.
2. Students will be able to define the computer as a problem-solving tool.
3. Students will be able to list some tasks a computer can and cannot do.
4. Students will be able to state some advantages and disadvantages of computers.
5. Students will be able to compare computer monitors.
6. Students will be able to name some brands of computers.
7. Students will be able to distinguish between a main frame and a microcomputer.
8. Students will be able to identify computer input mechanisms.
9. Students will be able to identify the basic components of a computer.
10. Students will be able to explain the relationship between input, output and process.
11. Students will be able to define various computer terms.
12. Students will be able to distinguish between software and hardware.
13. Students will be able to explain the purpose of programming.
14. Students will be able to list several computer languages.
15. Students will be able to list some computer careers.
16. Students will be able to list the three basic functions of a computer.
17. Students will be able to compare human and computer speed.
18. Students will be able to compare human and computer accuracy.
19. Students will be able to label correctly a diagram of computer components.
20. Students will be able to recognize a flow chart.

21. Students will be able to write and run a simple computer program.

22. Students will be able to match some computer tasks to the careers in which the tasks are performed.

23. Students will explore computer uses in the future.

24. Students will tell whether they think they might be using a computer in their careers.

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COMPUTER ORIENTATION

Lesson I

Content:	Introducing the Computer
Objectives:	1. Students will observe the loading and operation of a computer. 2. Students will demonstrate at least two computer care rules.
Entry Behaviors:	Students will have little or no preliminary experience using a computer.
Students:	K-3
Teacher:	Educational Media Specialist
Group:	Entire class accompanied by classroom teacher
Time:	20 minutes
Place:	Large areas in Learning Resource Center
Materials:	1. Computer Care Rules, p. 59. 2. Computer Care Quiz, p. 60. 3. Student pencils
Equipment:	1. Computer 2. Cassette Recorder 3. Video Monitor (if not built into computer) 4. Power Supply (if not built into computer) 5. Appropriate connecting lines

Teacher Preparation:

1. Turn on computer.
2. Turn on monitor (if necessary).
3. Select a simple program. Alphabet Keyboard (Random House) is recommended.
4. Have materials ready.
5. Seat students so that all can see computer.

Activities:

1. Students observe teacher load and operate the computer. Teacher explains the operations as they are performed.
   a. Place cassette in recorder.
   b. Load program.
   c. List program.
   d. Remove tape from recorder.
   e. List program again.
   f. Run program.
2. Students observe the results of correct and incorrect answers. Teacher explains as the operation progresses. Students can suggest the teacher do different operations. Students and teacher together follow the consequences of each operation.
3. Teacher distributes "Computer Care" sheet. Students and teacher read and discuss computer care rules.
4. Students answer teacher's questions about computer care rules.
5. When teacher thinks students are ready, students take computer care quiz.

6. Students return computer care quizzes to teacher for grading, or students may exchange papers for grading and return papers to teacher for analysis.

COMPUTER ORIENTATION

Lesson II

Content: Using the Computer - Respecting Equipment

Objectives:

1. Students will review computer care quizzes.
2. Students will practice using the computer keyboard through their computer keyboard work sheets.
3. Students will identify the enter keys.

Entry Behaviors:

1. Students will have observed the loading and operation of the computer at least once.
2. Students will demonstrate at least two computer care rules.

Students: K-3

Teacher: Educational Media Specialist

Group: Entire class accompanied by classroom teacher.

Time: 20 minutes

Place: Large area in Learning Resource Center

Materials:

1. Graded Computer Care Quizzes
2. Computer Keyboard Work Sheets, p. 61.
3. Computer Keyboard Transparency, p. 95.
4. Student Computer Records
5. Student pencils

Equipment:

1. Computer
2. Cassette Recorder

3. Vido Monitor (if not built into computer).
4. Power Supply (if not built into computer).
5. Appropriate connecting lines, power cords, and extension cords.
6. Overhead Projector.
7. Projection Screen.

Teacher Preparation:

1. Grade Computer Care quizzes.
2. Analyze Computer Care quiz results.
3. Plan review of most often missed items.
4. Set up overhead projector.
5. Set up screen.
6. Turn on computer.
7. Turn on monitor (if necessary).
8. Select a simple program. Alphabet Keyboard (Random House) is recommended.
9. Load program.
10. Have materials ready.
11. Seat students so that all can see computer.

Activities:

1. Students receive their graded Computer Care quizzes.
2. Students and teacher review the answers to the Computer Care quiz. Teacher emphasizes rules that were most frequently missed.

3. Students receive computer keyboard sheets.
4. Teacher shows how the computer keyboard sheets are related to the computer keyboard and the computer keyboard transparency.
5. Students and teacher operate the simple program, with students pressing the computer keyboard sheet and tracher giving feedback through computer keyboard transparency and computer keyboard.
6. Students and teacher practice together several times, emphasizing enter keys.
7. Students circle enter keys on the computer keyboard sheets.
8. Teacher checks the answers by moving through the group.
9. Teacher gives classroom teacher the student computer records and explains to students how the classroom teacher will write their computer assignments on the computer record sheets each time they use the computer in the learning resource center.
10. Teacher shows students where computer records should be placed when students come to the learning resource center and explains how the learning resource center staff will complete the student computer records and return them to the students to take back to their classroom teacher.
11. Several students role play the procedure for the class.

Evaluation: Students are able to identify the enter keys by circling them on the computer keyboard sheets.

Required Follow-Up Activity for the Classroom Teacher: The students are now ready to begin their computer assisted instruction in the learning resource center. The classroom teacher must select the programs each student is to complete. The classroom teacher must also schedule time for the students to use the computer. A student record sheet must be prepared each time a student is assigned to computer assisted instruction in the learning resource center.

Optional Follow-Up Activities for the Classroom Teacher:

1. Students color or type their name on the computer keyboard sheets.
2. Students color or type spelling or vocabulary words on the computer keyboard sheet.
3. Individual students select words, and all students type them on their computer keyboard sheets.
4. Students make up their own computer keyboard sheet games and play them.

Required Follow-Up for the LRC Staff: The learning resource center staff must have a system for scheduling the use of the computer. Also, the first few times students use the computer either the

media aide or a volunteer (could be student volunteer) will be needed to supervise the individual students one on one. Computer care rules, like all learning center rules, will need intermittent reinforcement with individual students all year long.

FOURTH GRADE

COMPUTER AWARENESS

Lesson I

Content: What Computers Do

Objectives:

1. Students will list things computers can do.
2. Students will list things computers cannot do.
3. Students will define a computer as a problem solving tool.

Entry Behaviors:

1. Students will have observed the loading and operation of a computer.
2. Students will demonstrate computer care rules.
3. Students will be able to use the computer for computer assisted instruction.

Students: Grade 4

Teacher: Educational Media Specialist

Group: Small group, not to exceed 15 students.

Time: 20 minutes

Place: Learning Resource Center

Materials:

1. "What Computers Do," Computer Awareness. Chicago: Society for Visual Education, 1981. (Filmstrip)
2. Computer Trip Sheet, pp. 62, 63.
3. Student pencils

Equipment:

1. Sound Filmstrip Projector
2. Filmstrip Projector and Cassette Recorder (if sound filmstrip projector is not available)
3. Appropriate power cords, extension cords, and connecting cords.
4. Projection Screen

Teacher Preparation:

1. Review the script and content of the teacher's manual which accompanies the filmstrip.
2. Preview the filmstrip.
3. Set up filmstrip projector.
4. Set up projection screen.
5. Have materials on hand.
6. Seat students within proper viewing angle of the screen.

Activities:

1. Students answer some of the following questions:
   a. What are some tools?
   b. What do tools do?
   c. Are computers or people faster?
   d. Are computers or people more accurate?
   e. Are computers or people smarter?
   f. What are some things computers can do that people cannot do?
   g. What are some things people can do that computers cannot do?
   h. Is the computer a tool?
   i. What kind of a tool is the computer?
   j. How would you define a computer?

2. Students discuss the following five vocabulary words and phrases:
   a. Tool
   b. Problem Solving
   c. Processing
   d. Storing
   e. Retrieving
3. Students are directed to notice examples of the computer storing, retrieving, and processing information as they view the filmstrip.
4. Students view the filmstrip.
5. Students answer some of the following questions:
   a. What are some advantages of computers?
   b. What are some disadvantages of computers?
   c. What do we mean when we say computers process information?
   d. What do we mean when we say computers store information?
   e. What do we mean when we say computers retrieve information?
   f. Why do computers need people to tell them what to do?
   g. Why do people need computers?
6. Students are given the computer trip sheet.
7. Students and teacher work together discussing the trip sheet and completing the questions.

8. Students develop and share some of their lists of things computers can and cannot do.
9. Students give their computer trip work sheets to teacher for grading.

Evaluation:

1. Students define a computer as a problem solving tool.
2. Students list three things computers can do.
3. Students list three things computers cannot do.

Optional Follow-Up Activities for the Classroom Teacher:

1. Students bring their personal computers and calculators to class and tell about them.
2. Students collect pictures of people doing things and make a bulletin board, dividing the pictures into two groups: (1) activities which computers can do and (2) activities which computers cannot do.
3. Students identify and discuss things in the operation of their classroom which the computer might help do.

COMPUTER AWARENESS

Lesson II

Content: Your Computer Experiences

Objectives:

1. Students will share both positive and negative experiences with computers.
2. Students will be able to identify some of the kinds of problems which computers can help solve.
3. Students will be able to identify tasks that computers can perform.
4. Students will be able to tell some advantages and disadvantages of computers.

Entry Behaviors:

1. Students will be able to use the computer for computer assisted instruction.
2. Students will be able to define a computer as a problem solving tool.
3. Students will be able to list at least three things computers can do.
4. Students will be able to list at least three things computers cannot do.

Students: Grade 4

Teacher: Educational Media Specialist

Group: Small group, not to exceed 15 students.

Time: 20 minutes

Place: Learning Resource Center

Materials:
1. Computer Task Vocabulary Transparency, p. 96.
2. Graded Computer Trip Work Sheets
3. Computers Can Do Work Sheets, p. 64.
4. Computer Task Quizzes, pp. 66, 67.
5. Student pencils

Equipment:
1. Overhead Projector
2. Projection Screen
3. Appropriate power cords, extension cords, and connecting cords.

Teacher Preparation:
1. Grade computer trip work sheets from the previous lesson.
2. Analyze the papers to determine where students need more assistance.
3. Plan review of most frequently missed items.
4. Have materials ready.
5. Set up overhead projector.
6. Set up overhead projection screen.
7. Seat students within appropriate viewing angle of screen.

Activities:
1. Students take turns defining the vocaculary words and phrases as presented by the teacher on the overhead projector.
2. Students receive graded computer trip work sheets.
3. Several students read their correct answers for the group.

4. Students and teachers discuss any questions about the work sheets.
5. Teacher emphasizes the questions that were most frequently missed.
6. Students share the good and bad experiences they and their families and friends have had with computers, while the teacher helps relate them to the definition, functions, and advantages of the computer by asking the following kinds of questions:
   a. What problem was the computer supposed to solve?
   b. Why was that an example of a good or bad use of the computer as a problem solving tool?
   c. How does that example show how the computer stores, processes, or retrieves information?
   d. What kinds of information were stored, processed, or retrieved?
   e. What advantages or disadvantages of the computer does that example highlight?
7. Students are given the computer can do work sheets.
8. Students discuss and complete the computer can do work sheets with the teacher helping them relate the tasks by asking the same kinds of questions as suggested above. If the students have done especially well in the first part of the lesson, the teacher may ask the students to work in groups of four or more to complete the computer can do work sheets. Then the groups can take turns comparing and discussing their answers.

9. Students are given computer task quizzes.
10. Students complete the quizzes independently.
11. Students turn in their computer task quizzes for grading.
12. If there is time, the teacher may review some or all of the quiz questions immediately after the quizzes are collected.

Evaluation: Students complete the computer task quiz with at least 70 percent accuracy.

Homework Assignment: Students collect computer advertisements from magazines or newspapers and bring to the next class.

Optional Follow-Up Activities for the Classroom Teacher:

1. Students write and record a 30- to 60-second radio commercial about an imaginary computer based on the definition, functions, and advantages of the computer that they have learned.
2. Students collect news items about computers and make a class scrapbook of them.
3. Students keep logs of when and where they saw computer advertisements on commercial television, indicating what the computer was shown doing.

COMPUTER AWARENESS

Lesson III

Content: Comparing Computers

Objectives:

1. Students will list several brands and models of computers.
2. Students will identify which major types each of the computers is -- mainframe or micro.
3. Students will compare input disc, cassette, cartridge, or keyboard.
4. Students will compare monitor colors - black and white, color, green, or amber.
5. Students will note whether monitors are built into the computers or are separate components.
6. Students will compare computer prices.

Entry Behavior:

1. Students will be able to use the computer for computer assisted instruction,
2. Students will be able to define a computer as a problem solving tool.
3. Students will be able to list tasks computers can and cannot do.
4. Students will be able to state some of the advantages and disadvantages of computers.

Students: Grade 4

Teacher: Educational Media Specialist

Group: Small group, not to exceed 15 students

Time: 20 minutes

Place: Learning Resource Center

Materials:

1. Computer Advertisements, pp. 23, 24, 25.
2. Sample Disc
3. Sample Cartridge
4. Sample Cassette
5. "How Computers Work," Computer Awareness. Chicago: Society for Visual Education, 1981. (Filmstrip)
6. Computer Comparison Matrices, p. 69.
7. Types of Computers Transparency, p. 97.
8. Computer Monitor Transparency, p. 98.
9. Computer Input Mechanisms Transparency, p. 99.
10. Computer Comparison Matrix Transparency, p. 100.

Equipment:

1. Filmstrip Projector
2. Overhead Projector
3. Projection Screen
4. Appropriate power cords, extension cords, and connecting cords.

Teacher Preparation:

1. Read Chapter 1 of Spotlight on Computer Literacy (Random House, 1982). Copies are available from the Instructional Materials Center if you do not have this title in your building's Learning Resource Center.

2. Set up filmstrip projector.
3. Set up overhead projector.
4. Set up projection screen.
5. Have materials ready.
6. Advance filmstrip to Frame 8
7. Seat student within proper viewing angles of screen.

Activities:

1. Students listen while teacher announces objectives of the lesson.
2. Students view Frame 8 of filmstrip while teacher points out the variety of computers available.
3. Students count the different computers they see.
4. Students view Frame 12 of filmstrip to see a mainframe computer.
5. Students view Frame 13 of filmstrip to see a micro computer.
6. Students view types of computers transparency to see vocabulary words for different types of computers.
7. Students tell what kinds of computers are in the learning resource center.
8. Students receive computer comparison matrices.
9. Students share their computer advertisements. (Three advertisements are included in this lesson for use in the event that students bring no advertisements.)
10. Students choose three or more of the computer advertisements to compare on their matrices.

11. Students identify the brand and model of computer in each advertisement and record it on their matrices. When the teacher observes that most of the students are finished, she works with the students to create a replica of their work in the brand and model column on the matrix overhead, providing students with feedback for their work. Students compare their matrices to the overhead matrix and make appropriate changes.
12. Students identify the types of computer in each advertisement and record it on their matrices. Teacher provides feedback by completing the matrix transparency. Students compare matrices and make changes.
13. Students view the computer input mechanisms transparency and listen while the teacher explains the three kinds of computer drive mechanisms -- disc, cartridge, cassette, and keyboard.
14. Students view and handle the sample disc, cartridge, and cassette which they pass around among themselves.
15. Students identify the kinds of drive mechanisms on the computers in their advertisements and record the information on the matrix transparency. Students compare matrices and make changes.
16. Students determine whether the computers in the advertisements have built-in or separate monitors and record the information on their matrices. Teacher provides feedback on the matrix transparency.

Students compare matrices and make changes.

17. Students view the transparency on computer monitors and listen while teacher explains the four different types -- black and white, color, green, and amber.
18. Students tell why they think there are different kinds of monitors and what they think might be the advantages of each kind.
19. Students identify what kind of monitors are in the computer advertisements and record the information on their matrices. Teacher provides feedback on the matrix transparency. Students compare matrices and make changes.
20. Students identify the prices of the computers in their advertisements and record the information on their matrices. Teacher provides feedback on the matrix transparency. Students compare matrices and make changes.

Optional Follow-Up Activities for the Classroom Teacher:

1. Students may add more computers to their comparison charts by trading ads and recording the appropriate information.
2. Students may solve some math problems based on their computer prices:
   a. How much would it cost to purchase one of each kind of computer for the classroom?

b. What are the differences in prices among the computers?

c. How much would it cost to get one of each kind of computer for each person in the classroom?

d. If one of each kind of computer were purchased, how much would the cost per pupil be?

e. If only one computer were purchased, how much would the cost per pupil be?

3. Students may add the different computer characteristics they observe to their logs of commercial television computer advertisements.

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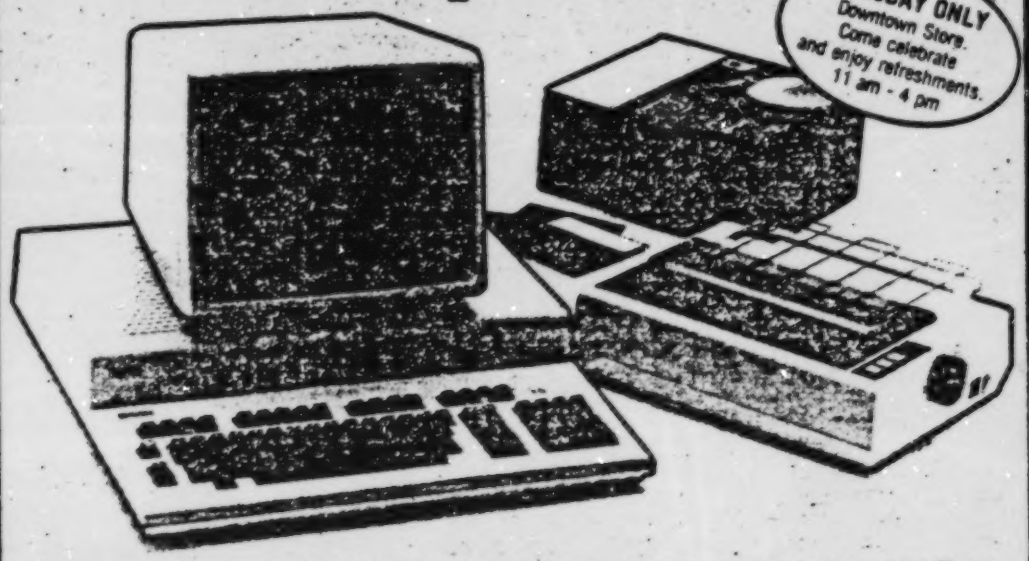

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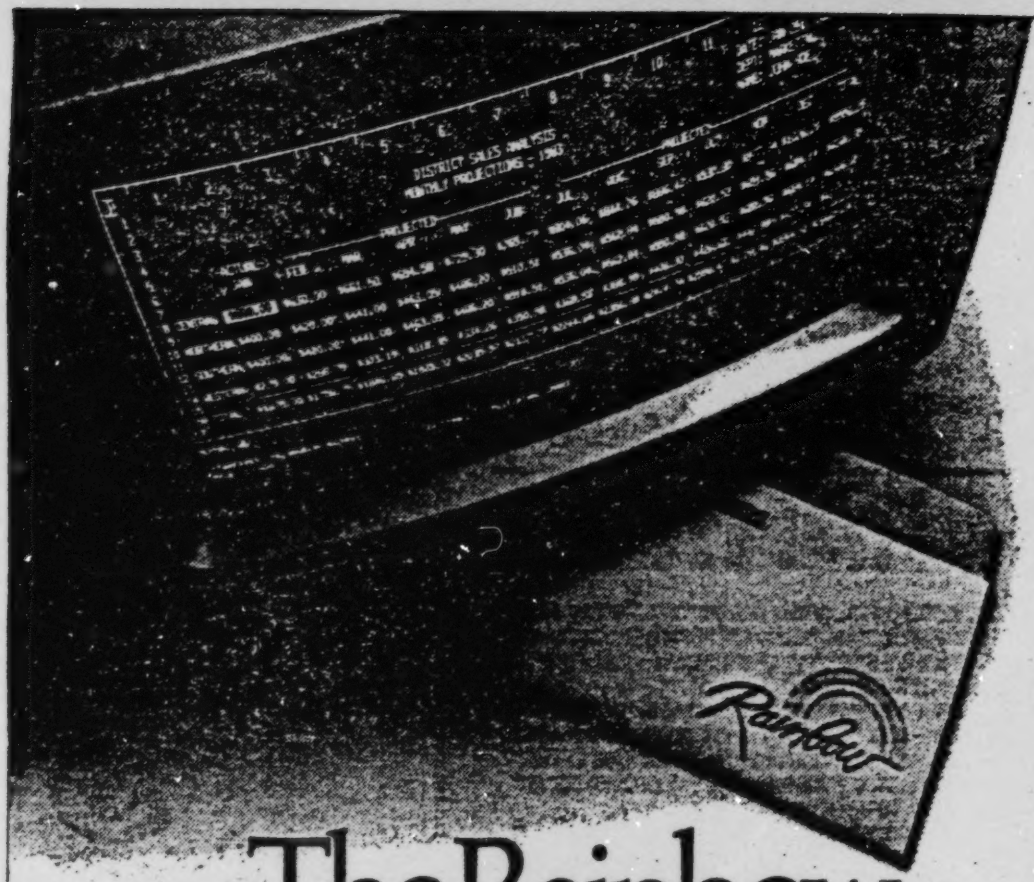

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COMPUTER AWARENESS

Lesson IV

Content: How Computers Work, Part 1

Objectives:

1. Students will identify the basic components of a computer.
2. Students will explain the relationship between input, process, and output.
3. Students will define various computer terms.
4. Students will explain the purpose of programming.
5. Students will distinguish between hardware and software.
6. Students will list several computer languages.

Entry Behaviors:

1. Students will be able to use the computer for computer assisted instruction.
2. Students will be able to define a computer as a problem solving tool.
3. Students will be able to list tasks computers can and cannot do.
4. Students will be able to state some of the advantages and disadvantages of computers.
5. Students will be able to name some brands of computers.
6. Students will be able to distinguish between a mainframe and a micro computer.

7. Students will be able to compare computer monitors.
8. Students will be able to identify computer input mechanisms.

Students: Grade 4

Teacher: Educational Media Specialist

Time: 20 minutes

Place: Learning Resource Center

Materials:
1. "How Computers Work," Computer Awareness. Chicago: Society for Visual Education, 1981. (Sound Filmstrip)
2. Computer Vocabulary Work Sheets, pp. 70, 71.
3. Computer Vocabulary Transparency, p. 101.
4. Computer Vocabulary Flash Cards, pp. 107-125.
5. Student Pencils

Equipment:
1. Sound Filmstrip Projector
2. Filmstrip Projector and Cassette Recorder (if sound filmstrip projector is unavailable)
3. Overhead Projector
4. Projection Screen
5. Appropriate power cords, extension cords, and connecting cords.

Teacher Preparation:
1. Review the content of the teacher's manual.
2. Review the script for the filmstrip.
3. Preview the filmstrip.
4. Review computer vocabulary work sheet.
5. Set up filmstrip projector.

6. Set up overhead projector.
7. Set up projection screen.
8. Have materials ready.
9. Seat students within proper viewing angle of the screen.

Activities:

1. Students listen as teacher announces the objectives of the lesson.
2. Students answer such review questions as:
   a. What is a computer?
   b. How does a computer know what to do?
   c. What are some of the ways information is put into a computer?
   d. What are some of the ways computers give out information?
   e. What are some of the types and brands of computers?
3. Students view the filmstrip and make up a list of computer vocabulary words on their computer vocabulary worksheets while viewing the filmstrip. Teacher pauses frequently to give students time to record vocabulary words in appropriate blanks on their worksheets and uses the computer vocabulary transparency to reinforce the students' work. Students read the definitions for each word together or individually as called upon by the teacher.
   a. Frame 14 -- Show computer chip

b. Frame 20 -- CPU

c. Frame 21 -- Processing

d. Frame 22 -- Output

e. Frame 29 -- Show disc

f. Frame 28 -- Note brand

g. Frame 31 -- Memory

h. Frame 35 -- RAM

i. Frame 36 -- ROM

j. Frame 42 -- Printer

k. Frame 45 -- Students identify components

l. Frame 46 -- Hardware

m. Frame 47 -- Software

n. Frame 53 -- FORTRAN

o. Frame 54 -- BASIC

4. If there is time, students may view the filmstrip once more without interruption.

5. If there is time, students may answer questions based on the vocabulary. Teacher gives the definition, and the students respond with the appropriate term. For a more difficult round, the students respond with the definition when the teacher calls out the term.

Evaluation: Students complete their vocabulary work sheets and have them checked for accuracy before they leave the learning resource center.

Homework Assignment: Students are to learn their vocabulary words and review their earlier work sheets for a test at the next lesson.

Optional Follow-Up Activities for the Classroom Teacher:

1. Students may be assigned in small groups to visit the learning resource center and review the filmstrip.
2. Students may drill one another on vocabulary words.
3. Students may make up flash card games based on the computer vocabulary flash cards.
4. Classroom teachers should be encouraged to provide for these activities, as the students will need practice before taking their final computer tests.

COMPUTER AWARENESS

Lesson V

Content: How Computers Work, Part 2

Objectives:

1. Students will identify the basic components of a computer.
2. Students will explain the relationship between input, output, and process.
3. Students will define various computer terms.
4. Students will explain the purpose of programming.
5. Students will distinguish between hardware and software.
6. Students will list several computer languages.

Entry Behaviors:

1. Students will be able to use the computer for computer assisted instruction.
2. Students will be able to define a computer as a problem solving tool.
3. Students will be able to list tasks computers can and cannot do.
4. Students will be able to state some of the advantages and disadvantages of the computer.
5. Students will be able to compare computer monitors.
6. Students will be able to name some brands of computers.

7. Students will be able to distinguish between a main frame computer and a microcomputer.
8. Students will be able to identify computer input mechanisms.

Students: Grade 4

Teacher: Educational Media Specialist

Time: 20 minutes

Place: Learning Resource Center

Materials:
1. Computer Vocabulary Flash Cards, pp. 107-125.
2. Computer Vocabulary Transparencies, pp. 101, 102.
3. Computer Task Vocabulary Transparency, p. 96.
4. Computer Hardware-Software Flash Cards, pp. 126-143.
5. Computer Awareness Test I, pp. 73-77.
6. Computer Awareness Certificate, p. 78.

Equipment:
1. Overhead Projector.
2. Projection Screen.
3. Appropriate power cords, extension cords, and connecting cords.

Teacher Preparation:
1. Review the Computer Awareness Test I.
2. Review the performance of the class on evaluation measures for previous lessons.
3. Analyze evaluation measures for strengths and weaknesses.
4. Plan to emphasize drill on weaker areas.
5. Set up overhead projector.
6. Set up projection screen.
7. Seat students within viewing angle of screen.

Activities:

1. Students listen as teacher reviews the objectives of the lesson.
2. Students listen as teacher reviews entry behaviors from previous lessons.
3. Students respond with appropriate identification of hardware or software when presented with computer hardware software flash cards and computer vocabulary flash cards.
4. Students respond with appropriate term when teacher reads definition or shows definition on flash cards.
5. Students respond with appropriate answers when teacher asks some of the following and similar questions.
   a. What is a computer?
   b. What three things do computers do with information?
   c. What are some brands of computers?
   d. What are some of the colors on computer monitors?
   e. What are the two main types of computers?
   f. What are some computer input devices?
   g. What are some computer output devices?
   h. What are some things computers can and cannot do?
   i. What are some advantages and disadvantages of computers?
6. When teacher thinks the students are ready to take their tests, the students are given the tests.
7. When the tests are completed, they are turned into the teacher for grading.
8. If there is time, students ask questions about the test before they return to the classroom.

9. If there is time, the teacher may review questions from the test before students return to the classroom.

Evaluation: Students pass the Computer Awareness Test I with at least 70 percent accuracy. Students who do not pass the first time, may take the test again.

Follow-Up Activity for the Classroom: Educational media specialist presents students who passed the Computer Awareness Test I with the Computer Awareness I Certificate.

FIFTH GRADE

COMPUTER AWARENESS

Lesson VI

Content: Computers in Everyday Life

Objectives:

1. Students will list some of the many uses of computers.
2. Students will list some computer careers.
3. Students will list the three basic functions of computers -- store, retrieve and process information.
4. Students will compare human and computer speeds.
5. Students will compare human and computer accuracy.

Entry Behaviors:

1. Students will be able to use the computer for computer assisted instruction.
2. Students will be able to define the computer as a problem solving tool.
3. Students will be able to list tasks a computer can and cannot do.
4. Students will be able to state some advantages and disadvantages of computers.
5. Students will be able to compare computer monitors.
6. Students will be able to name some brands of computers.

7. Students will be able to distinguish between a main frame computer and a micro computer.
8. Students will be able to identify computer input mechanisms.
9. Students will be able to identify the basic components of a computer.
10. Students will be able to explain the relationship between input, output, and process.
11. Students will be able to define various computer terms.
12. Students will be able to explain the purpose of programming.
13. Students will be able to distinguish between hardware and software.
14. Students will be able to list several computer languages.

Students: Grade 5

Teacher: Educational Media Specialist

Place: Learning Resource Center

Materials:

1. "Everyday Computers," Computer Awareness. Chicago: Society for Visual Education, 1981. (Sound Filmstrip)
2. Blank transparencies
3. Transparency marker
4. Scraps of paper for students
5. Pencils for students
6. Computer Utilization Work Sheets, pp. 80, 81.

7. Computer Vocabulary Transparencies, pp. 101, 102.
8. Computer Vocabulary Flash Cards, pp. 107-125.

Equipment:

1. Sound Filmstrip Projector
2. Filmstrip Projector and Cassette Recorder (if sound filmstrip projector is unavailable)
3. Overhead Projector
4. Projection Screen
5. Appropriate power cords, extension cords, and connecting cords.

Teacher Preparation:

1. Review the content of the teacher's manual.
2. Review the script for the filmstrip.
3. Preview the filmstrip.
4. Set up filmstrip projector.
5. Set up overhead projector.
6. Set up projection screen.
7. Have materials ready.
8. Seat students within proper viewing angle and distance of the screen.

Activities:

1. Students listen as teacher announces the objectives of the lesson.
2. Students discuss uses of computer which they have observed since the fourth grade.
3. Students answer such review questions as:
   a. What is a computer?
   b. What are some things computers <u>can</u> do?
   c. What are some things computers <u>cannot</u> do?
   d. What are some of the advantages of the computer?

e. What are some of the disadvantages of the computer?

f. What are the basic components of a computer?

g. What are some of the different kinds of computer monitors?

h. What are some different brands of computers?

i. What are some ways of putting information into a computer?

j. What are the differences between a main frame computer and a micro computer?

k. How would you explain computer input, output, and process.

l. How would you define the following computer terms:

   1. CPU
   2. memory
   3. RAM
   4. ROM
   5. control unit
   6. printer

   (Teacher might wish to use the computer vocabulary transparencies and flash cards to review these terms.)

m. What does a computer program do?

n. What is the difference between computer hardware and software?

o. What are some languages which are used with computers?

4. Students listen while teacher instructs them to notice the number of ways in which computers are used in the filmstrip.
5. Students view the filmstrip, listing uses on scrap paper.
6. Students use scraps of paper on which to record as many uses of the computer as they can.
7. Student with the shortest list records his or her answers on the overhead, followed by additions from students with the next longer lists, until all are recorded.
8. When all the uses are recorded, the teacher helps the students think of careers connected with the uses they have named. These are written on the transparency next to the first list.
9. Students listen as the teacher continues to bring out definitions, functions, advantages, and vocabulary as a part of the discussion.
10. Students discuss human and computer speed.
11. Students discuss human and computer accuracy.

Evaluation: Students complete computer utilization work sheets and have them checked for accuracy before they leave the learning resource center.

Homework Assignment: Students choose a career and tell how the computer is related to it in a brief written report. This assignment is due with Lessons 9 & 10.

Optional Follow-Up Activities for the Classroom Teacher:

1. Students may take a field trip to Lakewood High School for a demonstration of the career information computer, perhaps using information from it in their homework reports.
2. Students may view the film Uses of Computers Today. (Handel, 1983).

COMPUTER AWARENESS

Lesson VII

Content: Computer Components and Parts

Objectives:

1. Students will be able to identify computer components.
2. Students will be able to label correctly the parts of a computer system on a diagram of that system.

Entry Behaviors:

1. Students will be able to use the computer for computer assisted instruction.
2. Students will be able to define the computer as a problem solving tool.
3. Students will be able to list some tasks a computer can and cannot do.
4. Students will be able to state some advantages and disadvantages of computers.
5. Students will be able to compare computer monitors.
6. Students will be able to name some brands of computers.
7. Students will be able to distinguish between a main frame computer and a micro computer.
8. Students will be able to identify computer input mechanisms.

9. Students will be able to identify the basic components of a computer.
10. Students will be able to explain the relationship between input, output, and process.
11. Students will be able to define various computer terms.
12. Students will be able to explain the purpose of programming.
13. Students will be able to distinguish between hardware and software.
14. Students will be able to list several computer languages.
15. Students will be able to list some computer careers.
16. Students will be able to list the three basic functions of a computer.
17. Students will be able to compare human and computer speed.
18. Students will be able to compare human and computer accuracy.

Students: Grade 5

Teacher: Educational Media Specialist

Place: Learning Resource Center

Materials:
1. Computer Utilization Work Sheets, pp. 80, 81.
2. Students Reports on Computer Careers
3. Computer Vocabulary Transparencies, pp. 101, 102.
4. Computer Vocabulary Flash Cards, pp. 107-125.
5. Computer Components Transparency, p. 103.

6. Computer Parts Diagram Transparency, p. 104.
7. Transparency Markers
8. Computer Components Work Sheet, p. 82.
9. Computer Parts Diagram Work Sheet, p. 83.

Equipment:

1. Overhead Projector
2. Projection Screen
3. Appropriate power cords, extension cords, and connecting cords.

Teacher Preparations:

1. Review Computer Utilization Work Sheets, noting behaviors on which the class still needs practice.
2. Review computer terms.
3. Review computer components.
4. Review computer parts.
5. Set up overhead projector.
6. Set up projection screen
7. Have materials ready
8. Seat students within proper viewing angles and distances from the screen

Activities:

1. Students will discuss and review their computer utilization work sheets.
2. Students will listen to teacher explain the objectives of the lesson, naming the various parts of the computer and a computer system.
3. Students will watch as the teacher points out the various parts of the computer and computer system on the computer parts and computer system transparencies.

4. Students will review the computer parts and computer system components with various flash card activities.
   a. Matching the cards to the transparencies.
   b. Matching the cards to the computer.
   c. Naming the computer parts on the flash cards and telling their functions.
   d. Making up their own games, if there is time.
5. Students complete the computer components and computer system parts work sheets.
6. Students review the answers to the computer components and computer system parts work sheets.
7. Students turn in their computer components and computer system parts work sheets to teacher.
8. Students will share with their teacher their progress and problems in doing their computer career reports.

Evaluation: Students will complete the work sheets on computer components and computer system parts with at least 75 per cent accuracy.

Follow-Up Activities: Students will continue to work on their computer career reports.

COMPUTER AWARENESS

Lesson VIII

Content: Computer Programming

Objectives:

1. Students will be able to recognize a flow chart.
2. Students will be able to define the following terms:
   a. Program
   b. Flowchart
   c. Microcomputer
   d. Error statement
   e. COBOL
   f. PASCAL
   g. BASIC
3. Students will write and run a simple program using the following commands:
   a. RUN
   b. PRINT
   c. END

Students: Grade 5

Teacher: Educational Media Specialist

Materials:

1. "Introduction to Programming," Computer Awareness. Chicago: Society for Visual Education, 1981. (Filmstrip)

2. Computer Programming Work Sheet, p. 84.
3. Student pencils

Entry Behaviors:

1. Students will be able to use the computer for computer assisted instruction.
2. Students will be able to define the computer as a problem solving tool.
3. Students will be able to list some tasks a computer can and cannot do.
4. Students will be able to state some advantages and disadvantages of computers.
5. Students will be able to compare computer monitors.
6. Students will be able to name some brands of computers.
7. Students will be able to distinguish between a main frame computer and a microcomputer.
8. Students will be able to identify computer input mechanisms.
9. Students will be able to identify the basic components of a computer.
10. Students will be able to explain the relationship between input, output, and process.
11. Students will be able to define various computer terms.
12. Students will be able to explain the purpose of programming.
13. Students will be able to distinguish between hardware and software.

14. Students will be able to list several computer languages.
15. Students will be able to list some computer careers.
16. Students will be able to list the three basic functions of a computer.
17. Students will be able to compare human and computer speed.
18. Students will be able to compare human and computer accuracy.
19. Students will be able to label correctly a diagram of computer components.

Equipment:

1. Sound Filmstrip Projector
2. Filmstrip Projector and Cassette Recorder (if sound filmstrip projector is not available)
3. Appropriate power cords, extension cords, and connecting cords
4. Projection screen

Teacher Preparation:

1. Review the script and content of the teacher's manual which accompanies the filmstrip.
2. Preview the filmstrip.
3. Set up filmstrip projector.
4. Set up projection screen.
5. Have materials on hand.
6. Seat students within proper viewing angle of the screen.
7. Review computer components and computer parts work sheets and note items on which students need review.

Activities:

1. Students listen as teacher announces the objectives of the lesson.
2. Students view filmstrip, concentrating on the following frames at which teacher will reinforce the ideas, definitions, and concepts.
   a. Frame 6 -- program
   b. Frame 9 -- flowchart
   c. Frame 14 -- START
   d. Frame 20 -- BASIC
   e. Frame 21 -- line numbers
   f. Frame 22 -- PRINT, INPUT, END
   g. Frame 23 -- PRINT
   h. Frame 28 -- memory
   i. Frame 29 -- RUN
   j. Frame 38 -- COBOL, FORTRAN, BASIC, PASCAL
   k. Frame 43 -- BASIC, Beginning All-purpose Symbolic Instruction Code
3. Students review what they have learned in the filmstrip by discussing the following questions:
   a. What do we call the map which shows step-by-step directions for the computer?
   b. What are four computer languages and in which applications are they commonly used?
   c. What do we call the written set of directions given the computer?
   d. What command is used to make the computer program begin?

e. What command is given to make the computer stop?

f. What command tells the computer to print out a result?

g. What is the name given to personal portable computers?

3. Students complete computer programming work sheet.

4. Students check answers against answers teacher tells them.

5. Students make up their own simple computer program using RUN, PRINT, and END.

```
10 Print   "Hello"
20 Print   "My name is _____ _____"
30 END
  RUN
```

Evaluation: Students complete computer programming work sheet with 75 percent accuracy.

Homework: Students complete their programs.

Required Follow-Up Activities for the Classroom Teacher and LRC Staff: Classroom teacher and LRC staff work together to make sure each student has an opportunity to visit the LRC and run his or her program.

COMPUTER AWARENESS

Lesson IX

Content: Computer Careers

Objectives:

1. Students will match computer tasks to computer careers in which the tasks are performed.
2. Students will interview a computer worker, if possible.

Entry Behaviors:

1. Students will be able to use the computer for computer assisted instruction.
2. Students will be able to define the computer as a problem solving tool.
3. Students will be able to list some tasks a computer can and cannot do.
4. Students will be able to state some advantages and disadvantages of computers.
5. Students will be able to compare computer monitors.
6. Students will be able to name some brands of computers.
7. Students will be able to distinguish between a main frame and a microcomputer.
8. Students will be able to identify computer input mechanisms.
9. Students will be able to identify the basic components of a computer.

10. Students will be able to explain the relationship between input, output, and process.
11. Students will be able to define various computer terms.
12. Students will be able to explain the purpose of programming.
13. Students will be able to distinguish between hardware and software.
14. Students will be able to list several computer languages.
15. Students will be able to list some computer careers.
16. Students will be able to list the three basic functions of a computer.
17. Students will be able to compare human and computer speed.
18. Students will be able to compare human and computer accuracy.
19. Students will be able to label correctly a diagram of computer components.
20. Students will be able to recognize a flowchart.
21. Students will be able to write and run a simple computer program.

Students: Grade 5

Teacher: Educational Media Specialist

Group: Small group, not to exceed 15 students.

Time: 20 minutes

Place: Learning Resource Center

Materials:

1. Computer Careers Work Sheet, p. 86.
2. Computer Workers Work Sheet, p. 83.
3. Student Pencils
4. Blank Transparency
5. Transparency Marker
6. Transparency of Answers to Computer Careers, p. 105. Work Sheet

Equipment:

1. Overhead Projector
2. Appropriate power cords, extension cords, and connecting cords
3. Projection Screen

Teacher Preparation:

1. Review Computer Careers Work Sheet.
2. Review Computer Workers Work Sheet.
3. Have materials ready.
4. Set up overhead projector.
5. Set up projection screen.

Activities:

1. Students listen as teacher announces objectives of lesson.
2. Students answer such questions as:
   a. Do you know someone who works with a computer?
   b. What kind of position do they hold?
   c. What tasks do they perform on the computer?
   d. What problems do they solve?
   e. What kinds of languages do they use?
3. Students watch as teacher lists the careers and the tasks performed on a transparency.
4. Students receive Computer Careers Work Sheet.

5. Students complete the Computer Work Sheet.
6. Students check their answers against the answers the teacher presents on a transparency.
7. Students hand in their work.
8. Students receive a copy of the Computer Workers Work Sheet for their homework assignment.
9. Students listen as the teacher explains how to complete the homework assignment.
10. Students share their computer careers reports.
11. Introduce a computer worker, if possible.

Evaluation:

1. Students complete the Computer Careers Work Sheet with at least 75 percent accuracy.

Homework:

1. Students will interview a computer worker.
2. Students will complete the Computer Workers Work Sheet.
3. Students will draw a picture of the computer worker they interview.

Optional Follow-up Activities:

1. Students may write and run more simple programs of their own design.
2. Students may read books and magazine articles about computers and their applications and bring to class to share.

COMPUTER AWARENESS

Lesson X

Content: Computers in Your Future

Objectives:

1. Students will share interview information from their homework assignments.
2. Students will explore computer uses in the future.
3. Students will tell whether they think they might be using a computer in their careers.

Entry Behaviors:

1. Students will be able to use the computer for computer assisted instruction.
2. Students will be able to define the computer as a problem solving tool.
3. Students will be able to list some tasks a computer can and cannot do.
4. Students will be able to state some advantages and disadvantages of computers.
5. Students will be able to compare computer monitors.
6. Students will be able to name some brands of computers.
7. Students will be able to distinguish between a main frame and a microcomputer.

8. Students will be able to identify computer input mechanisms.
9. Students will be able to identify the basic components of a computer.
10. Students will be able to explain the relationship between input, output, and process.
11. Students will be able to define various computer terms.
12. Students will be able to explain the purpose of programming.
13. Students will be able to distinguish between software and hardware.
14. Students will be able to list several computer languages.
15. Students will be able to list some computer careers.
16. Students will be able to list the three basic functions of a computer.
17. Students will be able to compare human and computer speed.
18. Students will be able to compare human and computer accuracy.
19. Students will be able to label correctly a diagram of computer components.
20. Students will be able to recognize a flow chart.
21. Students will be able to write and run a simple computer program.
22. Students will be able to match some computer tasks to the careers in which the tasks are performed.

Students: Grade 5

Teacher: Educational Media Specialist

Group: Small group, not to exceed 15 students

Time: 20 minutes

Materials:
1. Computer Word Search, p. 89.
2. Computer Operator's Test, pp. 91, 92.
3. Computer Operator's Licenses, p. 93.
4. Transparency of Answers to Computer Operator's Test, p. 106.

Equipment:
1. Overhead Projector
2. Appropriate power cords, extension cords, and connecting cords.
3. Projection Screen

Teacher Preparation:
1. Read Chapter 12 of Spotlight on Computer Literacy. (Random House, 1982)
2. Have materials on hand
3. Set up equipment

Activities:
1. Students share information from their computer worker interviews, while the teacher brings out points which are in need of review according to study of the Computer Careers Work Sheets.
2. Students and teachers discuss the future of computers including:
   a. Robots
   b. Space exploration
   c. Interactive video
   d. Home usage
   e. Unusual uses

3. Students tell whether they think they will be working with a computer in their future careers.
4. Students receive Computer Operator's Test
5. Students complete the Computer Operator's Test.
6. Students check their answers against those given them by their teacher.
7. Students receive a copy of the Computer Word Search.
8. Students complete the Computer Word Search while teacher re-checks the Computer Operator's Tests.
9. Students who complete the Computer Operator's Test with at least 75 percent accuracy receive Computer Operator's License.
10. Students share their computer career reports.

Evaluation: Students complete the Computer Operator's Test with at least 75 percent accuracy.

Optional Follow-Up Activities:

1. Students complete Computer Word Search.
2. Students continue to write and run their own simple programs.

WORK SHEETS

QUIZZES

ANSWER KEYS

BEST COPY AVAILABLE

COMPUTER CARE RULES

Leave computer on.

Use clean hands.

86 Press keys gently.

Watch your time. 87

BEST COPY AVAILABLE

Circle the best answers.

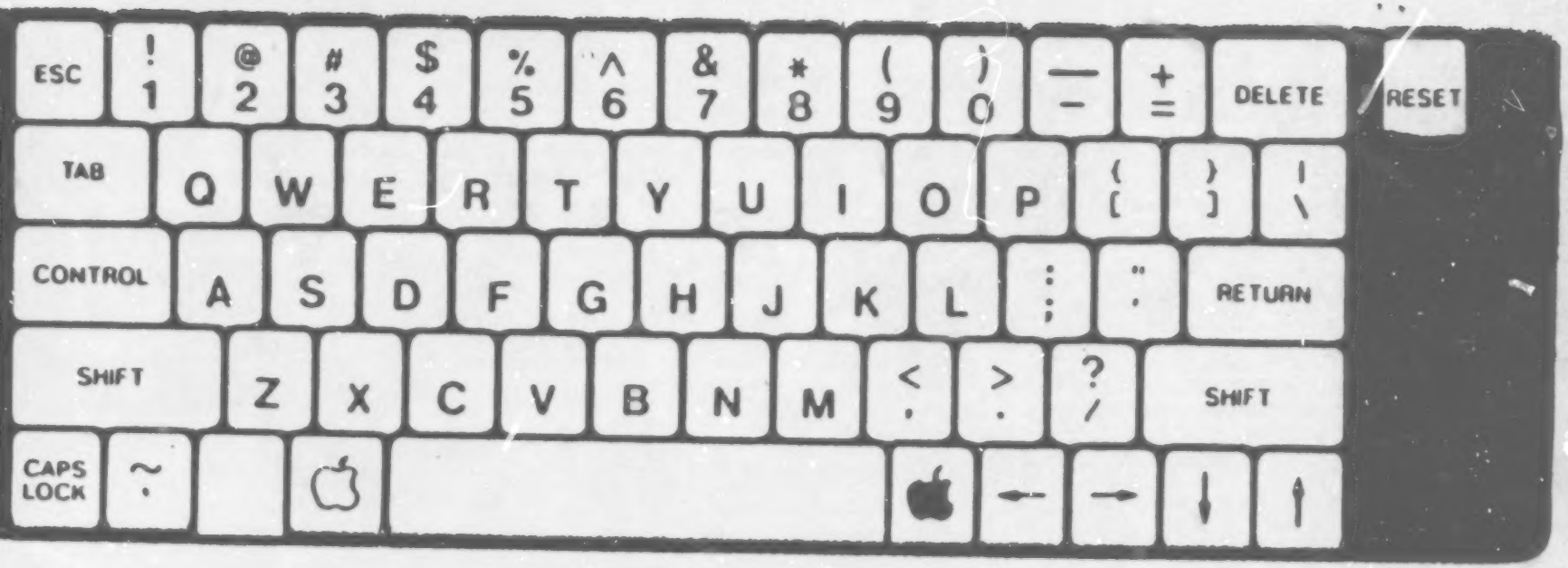
COMPUTER CARE QUIZ

Name _____

Room _____

COMPUTER KEYBOARD

(Apple IIe)



BEST COPY AVAILABLE

COMPUTER TRIP WORK SHEET

Cross out the activities a computer cannot do after you discuss this computer trip with your teacher and your class.

1. Read a book about the vacation.
2. Decide what time to get up.
3. Have alarm ring at predetermined time.
4. Pick a restaurant for lunch.
5. Decide what clothes to take.
6. List clothes to put in suitcase.
7. Decide what places to visit.
8. Alphabetize list of places to visit.
9. Add up bill at fast-food restaurant.
10. List the prices on the menu in ascending order.
11. Make a decision about what to eat.
12. Get tired of sitting in the car.
13. Calculate the cost of gasoline.
14. Charge the gasoline.
15. Press the button to take snapshots.

16. Decide to pack your sleeping bag.
17. Listen to a weather report.
18. Calculate the average daily temperature.
19. Add mileage between cities.
20. Determine the shortest route to travel.
21. Calculate the cost of the vacation.
22. Write a postcard to your friends.
23. Go for a swim.
24. Get a tan.

List three things computers can do.

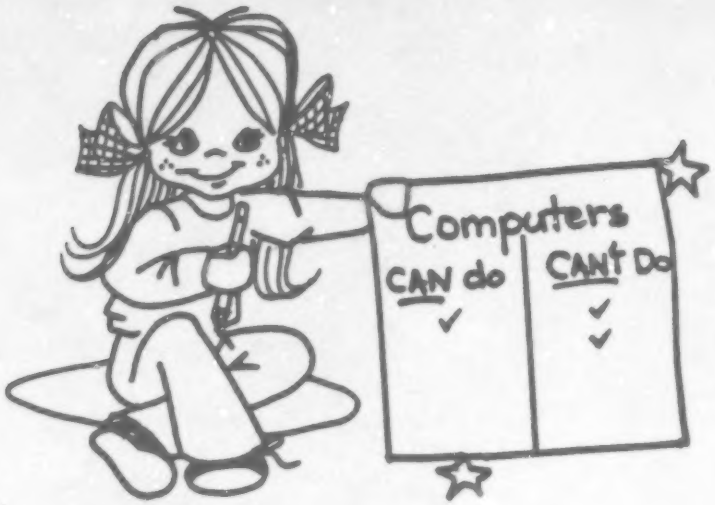
1. _____
2. _____
3. _____

List three things computers cannot do.

1. _____
2. _____
3. _____

What is a computer?

A computer is a _____ for _____



COMPUTERS CAN DO WORK SHEET

Write A for those tasks that best suit a computer. Write B for those tasks only the brain could do. Write C for those tasks that a calculator could do.

1. _____ Decide to buy an ice cream cone.
2. _____ Check a grocery bill.
3. _____ Keep track of your allowance.
4. _____ Feel good about your test score.
5. _____ Store data.
6. _____ Remember to stop at the drug store on the way home.
7. _____ Add your bowling score.
8. _____ Forget your homework.
9. _____ Multiply 63 x 92.
10. _____ Alphabetize a mailing list.

ANSWER KEY TO COMPUTERS CAN DO WORK SHEET

(To be shown in teacher's manual only.

1. B.
2. C.
3. A.
4. B.
5. A.
6. A.
7. C.
8. B.
9. C.
10. A.

COMPUTER TASK QUIZ

Circle the best answer.

1. A computer is a tool that can:
   A. think for people.
   B. process information.
   C. calculate mathematical problems only.
2. A computer can:
   A. alphabetize a mailing list.
   B. decide what kind of candy to buy.
   C. develop mathematical formulas.
3. Computers:
   A. work faster than people.
   B. can control people's lives.
   C. get tired more quickly than people.
4. A computer remembers:
   A. numbers but not words.
   B. words but not numbers.
   C. everything it is told.

5. A computer is just:

   A. a machine .

   B. like our brain.

   C. like a calculator.

6. Computers:

   A. make problems.

   B. solve problems.

   C. do not deal with problems.

7. Because of improvements in technology, computers are now:

   A. larger, faster, more expensive.

   B. smaller, faster, cheaper.

   C. smaller, less available.

8. One disadvantage of computers is that they:

   A. cannot be controlled by people.

   B. must be given correct instructions.

   C. often break down.

9. One advantage of computers is that they:

   A. know when they are given wrong information.

   B. can reason.

   C. can repeat things endlessly.

10. A computer can:

    A. show pictures.

    B. write stories.

    C. decide who to vote for.

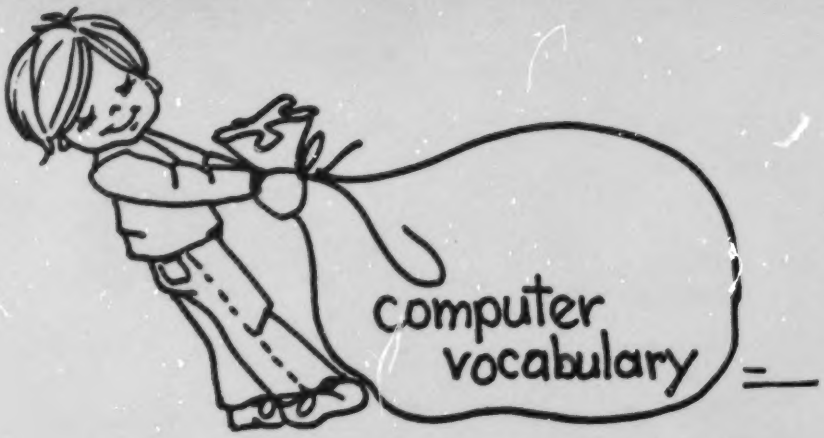
ANSWER KEY TO COMPUTER TASK QUIZ

(To be shown in teacher's manual only)

1. B.
2. A.
3. A.
4. C.
5. A.
6. B.
7. B.
8. B.
9. C.
10. A.

COMPARING COMPUTERS

Brand and Model	Type Mainframe Micro	Input Keyboard Disc Cassette Cartridge	Monitor Included Yes No	Color B/W, Color, Green, Amber	Price
1.					
2.					
3.					
4.					
5.					



COMPUTER VOCABULARY WORK SHEET

Write the correct term in the blank provided.

1. _____ Information and instructions given the computer.
2. _____ Central Processing Unit, where the work is done inside the computer.
3. _____ Work being done.
4. _____ Results or information asked for.
5. _____ Storage space where words and numbers can be stored.
6. _____ Random Access Memory, the most common storage where information can be stored or retrieved at any time.
7. _____ Read Only Memory, information for the computer that was built into it and cannot be changed or taken out.
8. _____ Directs instructions and flow of information through the computer.
9. _____ An output device which types out the computer answers.

10. _____ The actual machinery of the computer.

11. _____ Instructions and information used in the computer.

12. _____ A computer language used in mathematics and science.

13. _____ A computer language most commonly used by students.

14. _____ A computer language used to make lines and designs.

15. _____ A computer language used in mathematics and sciences.

16. _____ A computer language used in business.

ANSWER KEY TO COMPUTER VOCABULARY WORK SHEET

(To be shown in teacher's manual only)

1. input.
2. CPU.
3. processing.
4. output.
5. memory.
6. RAM.
7. ROM.
8. control unit.
9. printer.
10. hardware.
11. software.
12. FORTRAN and/or PASCAL.
13. BASIC.
14. LOGO.
15. PASCAL and/or FORTRAN.
16. COBOL.

COMPUTER AWARENESS TEST I

Print "Hardware" or "Software" in the space provided by each term.

1. _____ Monitor
2. _____ Disc
3. _____ Printer
4. _____ Program
5. _____ Keyboard

Print "Input" or "Output" in the space provided by each term.

6. _____ Keyboard
7. _____ Program
8. _____ Printer
9. _____ Monitor
10. _____ Cassette

Use the words below to fill in the blanks in the following sentences.

problem solving

store

retrieve

process

program

BASIC

micro

TRS 80

monitor

output

11. The Learning Resource Center's type of computer is a _____ computer.

12, 13, 14. Computers can _____, _____, and _____ information.

15. _____ is the computer language most often used by students.

16. The computer _____ gives the directions to the computer.

17. The computer is a tool for _____.

18. One brand of computer is the _____.

19. It is important to notice whether the computer _____ is

20. built into the computer or is a separate piece of hardware. The printer and the monitor are computer _____ devices.

Write the best word in the space before each definition.

hardware	CPU
monitor	FORTRAN
BASIC	RAM
software	ROM
program	input

21. _____ a computer language for science and mathematics
22. _____ controls the flow of information
23. _____ the machinery of the computer
24. _____ used to view computer output
25. _____ instructions for computer to do a task
26. _____ permanent information stored in a computer at the factory
27. _____ Random Access Memory
28. _____ a simple computer language often used by students
29. _____ keyboard
30. _____ programs that are written for computers

Write "true" or "false" before each statement.

31. _____ Computers need people to give them directions.
32. _____ The directions for computers are called programs.
33. _____ Information is fed into a computer by keyboards and cassettes.
34. _____ The CPU is where the information is processed.
35. _____ Processing is the work done inside the computer.
36. _____ The memory is part of the CPU.

37. _____ RAM and ROM are two kinds of computer memory.

38. _____ A printer is one method of getting information out of a computer.

39. _____ Computers perform many operations faster than people.

40. _____ Computers are often more accurate than people.

Circle the best answer.

41. A computer language for science and mathematics is:

    A. BASIC.

    B. COBOL.

    C. PASCAL.

42. Which operation does the computer NOT perform?

    A. Store information.

    B. Process information.

    C. Create information.

43. Which is NOT one of the kinds of computer memories?

    A. CPU.

    B. ROM.

    C. RAM.

44. Which is NOT a computer brand?

    A. TRS-80.

    B. Kellog.

    C. Atari.

45. Which color is NOT usually found on computer monitors?

    A. Black and white.

    B. Color.

    C. Red.

46. Which is NOT a computer output?

    A. Keyboard.

    B. Printer.

    C. Monitor.

47. Which is NOT a computer input?

    A. Keyboard.

    B. Printer.

    C. Cassette.

48. Which is NOT a common computer type?

    A. Micro.

    B. Main frame.

    C. Midget.

49. Which operation does the computer NOT perform?

    A. Decide which clothes you wear.

    B. Average your test scores.

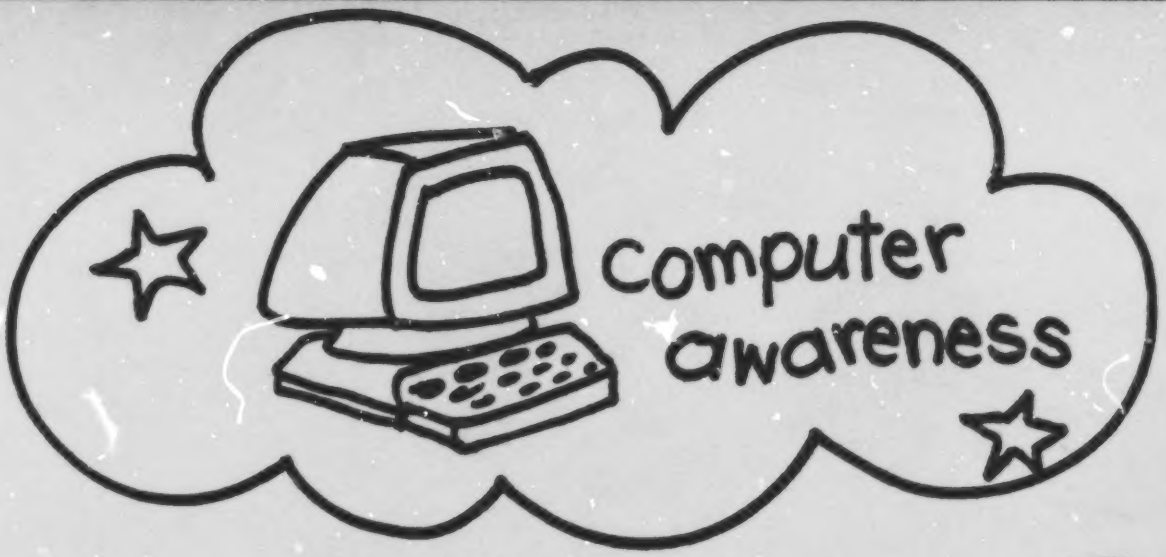
    C. List your spelling words.

50. Which is a computer language for business?

    A. SNOBOL.

    B. INFO.

    C. COBOL.



This is to certify that

_____

has successfully completed

COMPUTER AWARENESS TRAINING I

KEY FOR COMPUTER AWARENESS TEST I

(to be shown in teacher's manual only)

1. Hardware
2. Software
3. Hardware
4. Software
5. Hardware
6. Input
7. Input
8. Output
9. Output
10. Input
11. micro
12, 13, 14. store, process, retrieve (in any order)
15. BASIC
16. program
17. problem solving
18. TRS-80
19. monitor
20. output
21. FORTRAN
22. CPU
23. hardware
24. monitor
25. program
26. ROM
27. RAM
28. BASIC
29. input
30. software
31. True
32. True
33. True
34. True
35. True
36. True
37. True
38. True
39. True
40. True
41. C
42. C
43. A
44. B
45. C
46. A
47. B
48. C
49. A
50. C

COMPUTER UTILIZATION WORK SHEET

1. List five ways in which computers are used in everyday life.

   A. _____

   B. _____

   C. _____

   D. _____

   E. _____

2. What are five careers that involve computers?

   A. _____

   B. _____

   C. _____

   D. _____

   E. _____

3. What are the three basic functions of a computer?

   A. _____

   B. _____

   C. _____

4. Place a check before the more accurate.

   A. _____ Computer.

   B. _____ Person.

5. Place a check before the quicker.

   A. _____ Computer.

   B. _____ Person.

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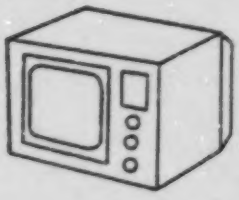
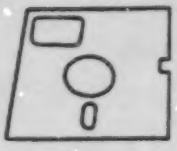
COMPUTER COMPONENTS WORK SHEET

Print "Hardware" or "Software" in the space provided by each picture.
Try to name each item.



1 _____



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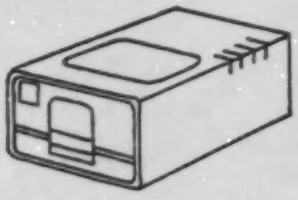
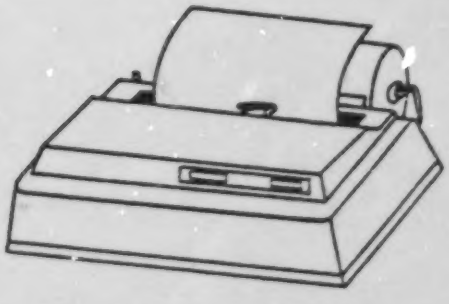
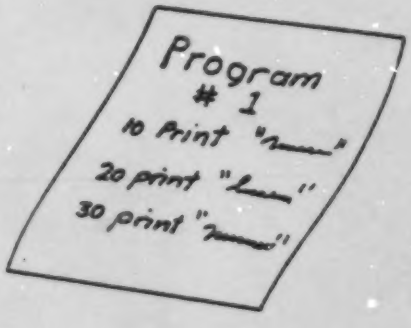


3 _____

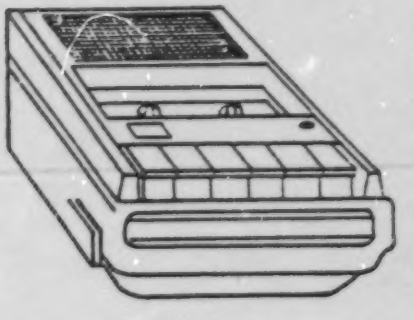


4 _____

5 _____

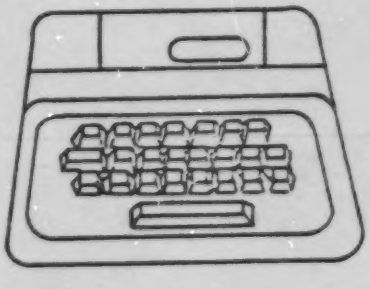


6 _____



7 _____

8 _____



9 _____

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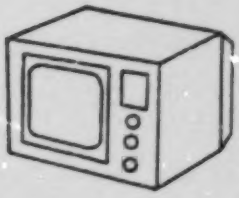
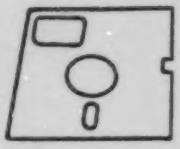
ANSWER KEY TO COMPUTER COMPONENTS WORK SHEET

(To be in teacher's manual only)

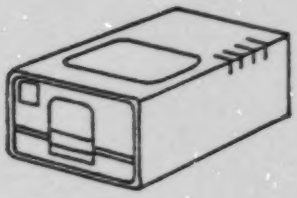
Print "Hardware" or "Software" in the space provided by each picture. Try to name each item.



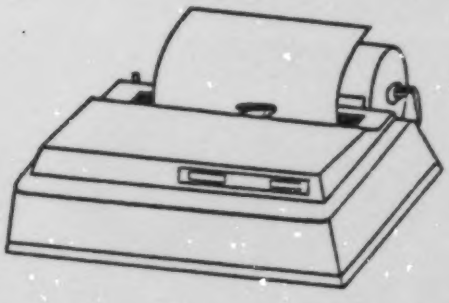
1 Monitor



2 Floppy Disc

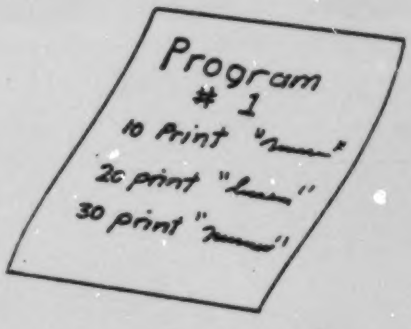


3 Disc Drive

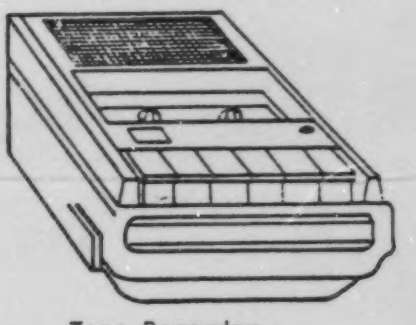


4 Printer

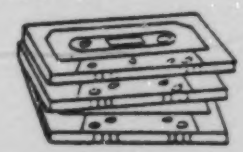
5 Central Processing Unit



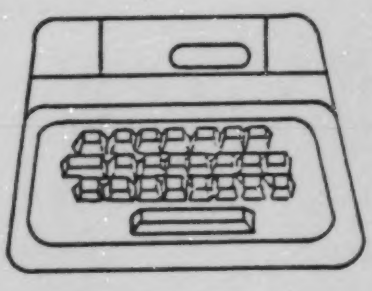
6 Program



7 Tape Recorder



8 Tapes



9 Keyboard

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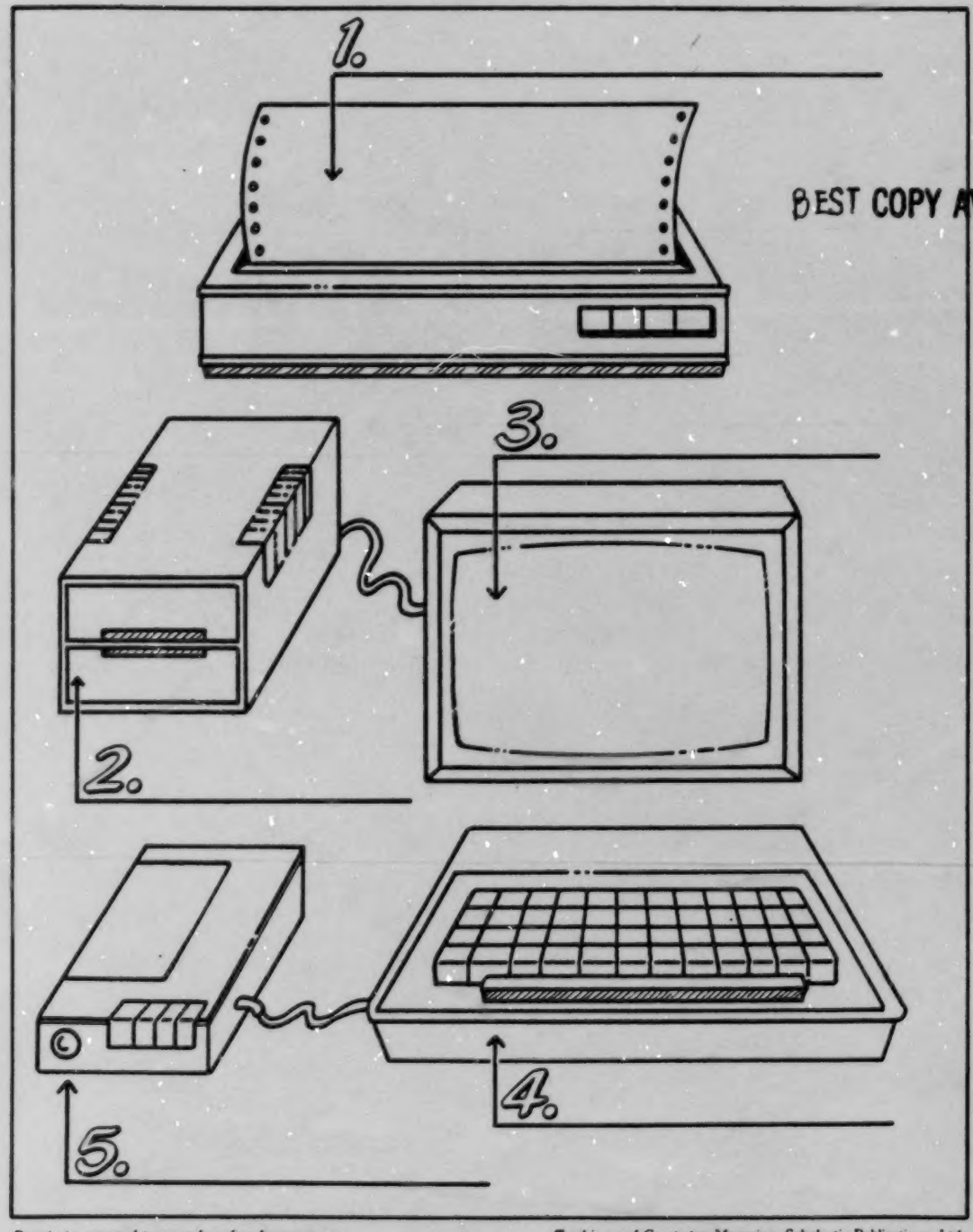
Name_____

Parts of a Computer

Label the main parts of a computer.
Use these names: monitor, printer, disk drive, recorder, keyboard.



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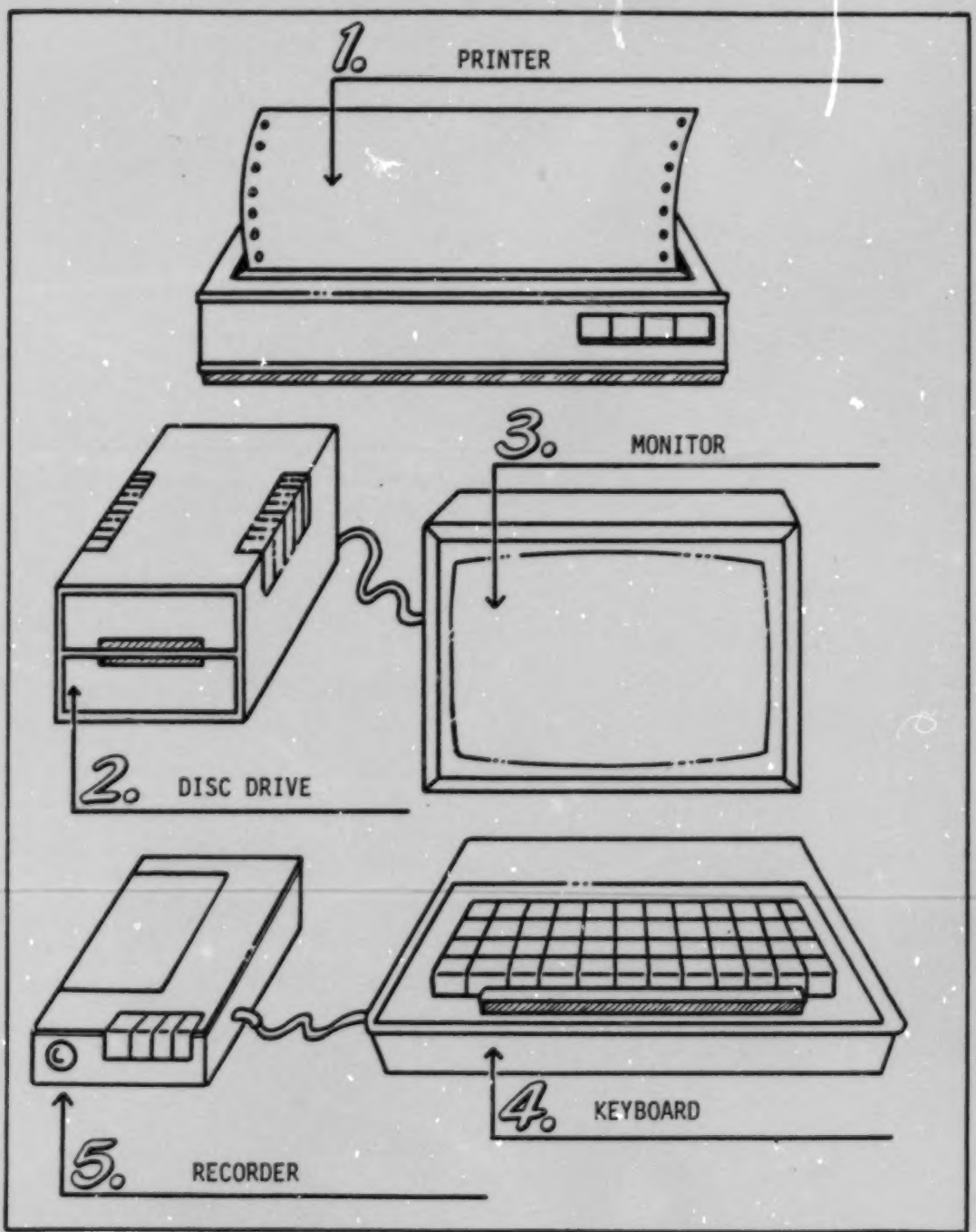
Name _____

Parts of a Computer

Label the main parts of a computer.
Use these names: monitor, printer, disk drive, recorder, keyboard.



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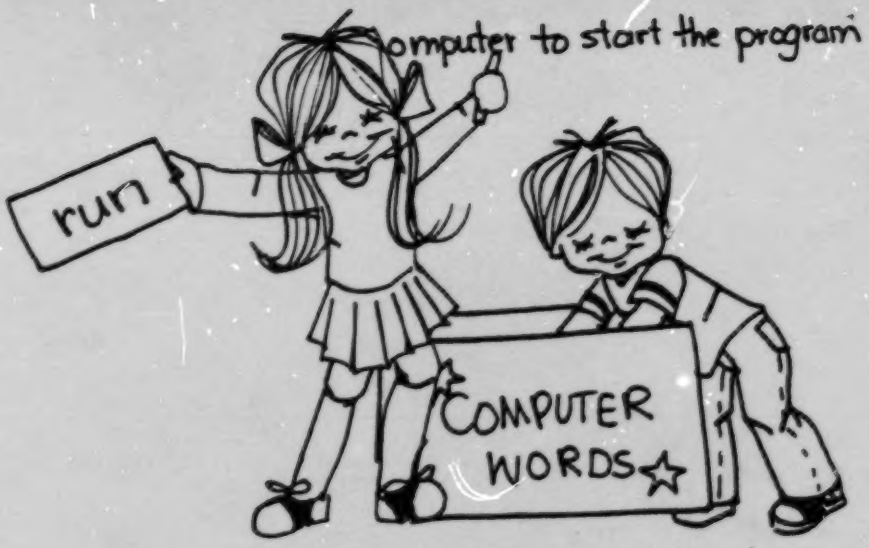


COMPUTER PROGRAMMING WORK SHEET "

Write the word that best fits the definition in the blank at the beginning of each line.

BASIC	program	PASCAL	RUN	END
error	statement	flowchart	COBOL	microcomputer	PRINT

1. _____ tells the programmer there is a mistake.
2. _____ a set of directions that tells the computer to perform a task.
3. _____ a diagram of directions for the computer.
4. _____ a small portable computer.
5. _____ tells the computer to stop.
6. _____ a computer language named after a mathematician.
7. _____ tells the computer to print out a result.
8. _____ tells the computer to start the program.
9. _____ an all-purpose computer language that is easy for beginners.
10. _____ a computer language used in business.

ANSWER KEY FOR COMPUTER PROGRAMMING WORK SHEET

(To be shown in teacher's manual only)

1. error statement.
2. program.
3. flowchart.
4. microcomputer.
5. END.
6. PASCAL.
7. PRINT.
8. START.
9. BASIC.
10. COBOL.

COMPUTER CAREERS

Write the letter of the appropriate computer task in the blank before each career.

CAREER	TASK
_____ 1. Store Manager	A. Checkbook balancing.
_____ 2. Family Budget Manager	B. Word processing.
_____ 3. Dietician	C. Inventory control.
_____ 4. Accountant.	D. Classroom records.
_____ 5. Teacher	E. Menu planning.
_____ 6. Travel Agent	F. Computing taxes.
_____ 7. Engineer.	G. Searching for court decisions.
_____ 8. Doctor	H. Drawing plans.
_____ 9. Attorney.	I. Scheduling a trip.
_____10. Writer	J. Diagnosing symptoms.

ANSWER KEY FOR COMPUTER CAREERS QUIZ

(To be shown in teacher's manual only)

1. C.
2. A.
3. E.
4. F.
5. D.
6. I.
7. H.
8. J.
9. G.
10. B.

COMPUTER WORKERS

Interview a computer worker in your family or community. Ask him or her the following questions. Draw a picture of your computer worker. Report what you have learned to the class.

1. Where do you work?
2. What computer language do you use in your work?
3. What kind of background and training is needed for your work?
4. What kind of work do you do? What problems do you solve?
5. Are there other kinds of work you can do with your computer skills?
6. What are the things you like about your work? Do you dislike anything about working with computers?
7. Why did you decide to become a computer worker?

COMPUTER WORD SEARCH

Look at the puzzle below. Circle all of the computer words you find. Look from left to right, right to left, top to bottom, bottom to top, and corner to corner.

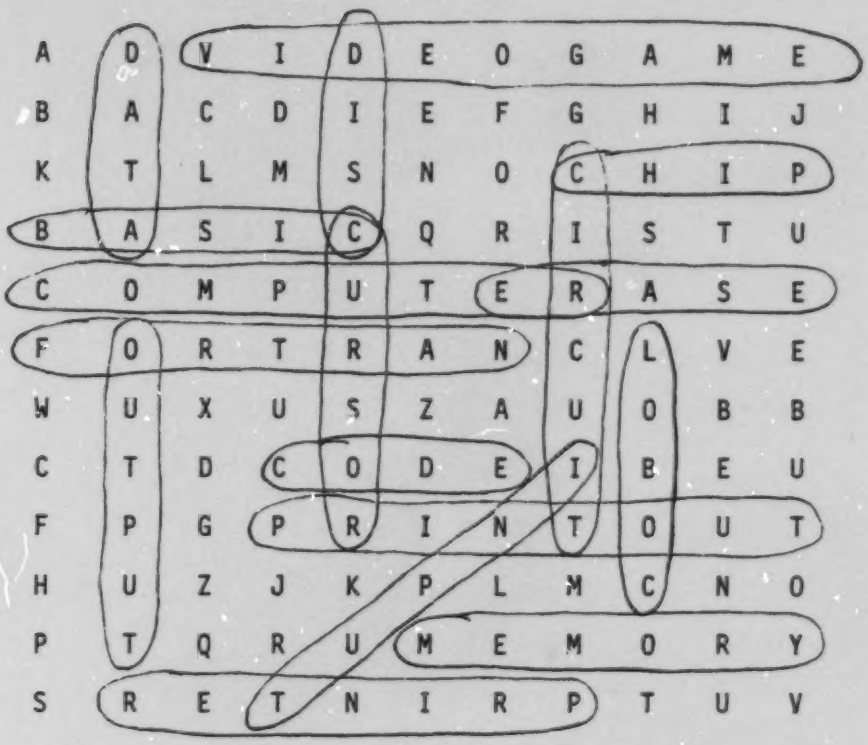
A	D	V	I	D	E	O	G	A	M	E
B	A	C	D	I	E	F	G	H	I	J
K	T	L	M	S	N	O	C	H	I	P
B	A	S	I	C	Q	R	I	S	T	U
C	O	M	P	U	T	E	R	A	S	E
F	O	R	T	R	A	N	C	L	V	E
W	U	X	U	S	Z	A	U	O	B	B
C	T	D	C	O	D	E	I	B	E	U
F	P	G	P	R	I	N	T	O	U	T
H	U	Z	J	K	P	L	M	C	N	O
P	T	Q	R	U	M	E	M	O	R	Y
S	R	E	T	N	I	R	P	T	U	V

Words to find:

BASIC
chip
circuit
COBOL
code
computer
cursor
data
disc
erase
FORTRAN
input
memory
output
printer
printout
video game

COMPUTER WORD SEARCH

Look at the puzzle below. Circle all of the computer words you find. Look from left to right, right to left, top to bottom, bottom to top, and corner to corner.


A D V I D E O G A M E
B A C D I E F G H I J
K T L M S N O C H I P
B A S I C Q R I S T U
C O M P U T E R A S E
F O R T R A N C L V E
W U X U S Z A U O B B
C T D C O D E I B E U
F P G P R I N T O U T
H U Z J K P L M C N O
P T Q R U M E M O R Y
S R E T N I R P T U V

Words to find:

BASIC
chip
circuit
COBOL
code
computer
cursor
data
disc
erase
FORTRAN
input
memory
output
printer
printout
video game

COMPUTER OPERATOR'S TEST

Circle the letter in front of the answer that best completes each sentence.

1. Computers:

   A. are of no use to people.

   B. are not part of our everyday lives.

   C. help people do things faster and better.

2. Some microwave ovens are computerized. Before it can process and output, you have to input _____ into the microwave oven.

   A. cooked food.

   B. salt and pepper.

   C. cooking instructions.

3. Computers can:

   A. cook.

   B. think.

   C. only do what they are programmed to do.

4. Many cash registers are computerized. The output from a computerized cash register is:

   A. the total amount you have to pay, and a list of the purchases.

   B. the items you purchase.

   C. the packaging.

5. The order in which computers handle information is:

   A. process, input, output.

   B. input, output, process.

   C. input, process, output.

6. Computers are:

   A. slow.

   B. accurate.

   C. both slow and accurate.

7. Computers cannot:

   A. add.

   B. create new ideas.

   C. make comparisons.

8. The use of computers has:

   A. created many new jobs.

   B. created no new jobs.

   C. created new weather patterns.

9. People use computers:

   A. to solve problems.

   B. for fun and entertainment.

   C. both A and B.

10. Input is:

    A. information taken out of the computer.

    B. information fed into the computer.

    C. the keyboard.

This is to certify that

_____

has successfully completed

COMPUTER OPERATOR TRAINING

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COMPUTER OPERATOR'S TEST ANSWER KEY

(To be shown in teacher's manual only)

1. C.
2. C.
3. C.
4. A.
5. C.
6. C.
7. B
8. A.
9. C.
10. B.

TRANSPARENCIES

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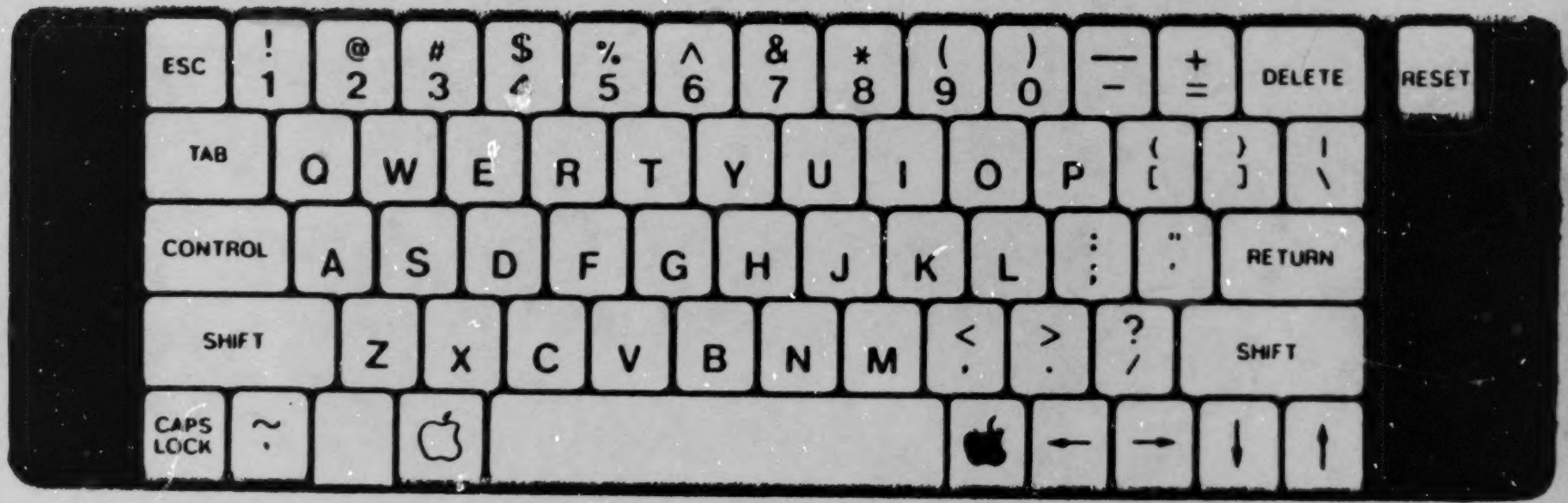
COMPUTER KEYBOARD

(Apple IIe)



COMPUTER TASK VOCABULARY

Tool

Problem Solving

Store

Retrieve

Process

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COMPUTER TYPES

1. Main Frame
2. Micro
3. Mini
4. Pocket
5. Other

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COMPUTER MONITORS

1. Black and white
2. Color
3. Green
4. Amber

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COMPUTER INPUT MECHANISMS

1. Disk

2. Cartridge

3. Cassette

4. Keyboard

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COMPARING COMPUTERS

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BRAND AND MODEL	TYPE	INPUT	MONITOR	COLOR	PRICE

COMPUTER VOCABULARY

input

CPU

processing

output

memory

RAM

ROM

control unit

BEST COPY AVAILABLE

COMPUTER VOCABULARY

printer

hardware

software

FORTRAN

BASIC

LOGO

PASCAL

COBOL

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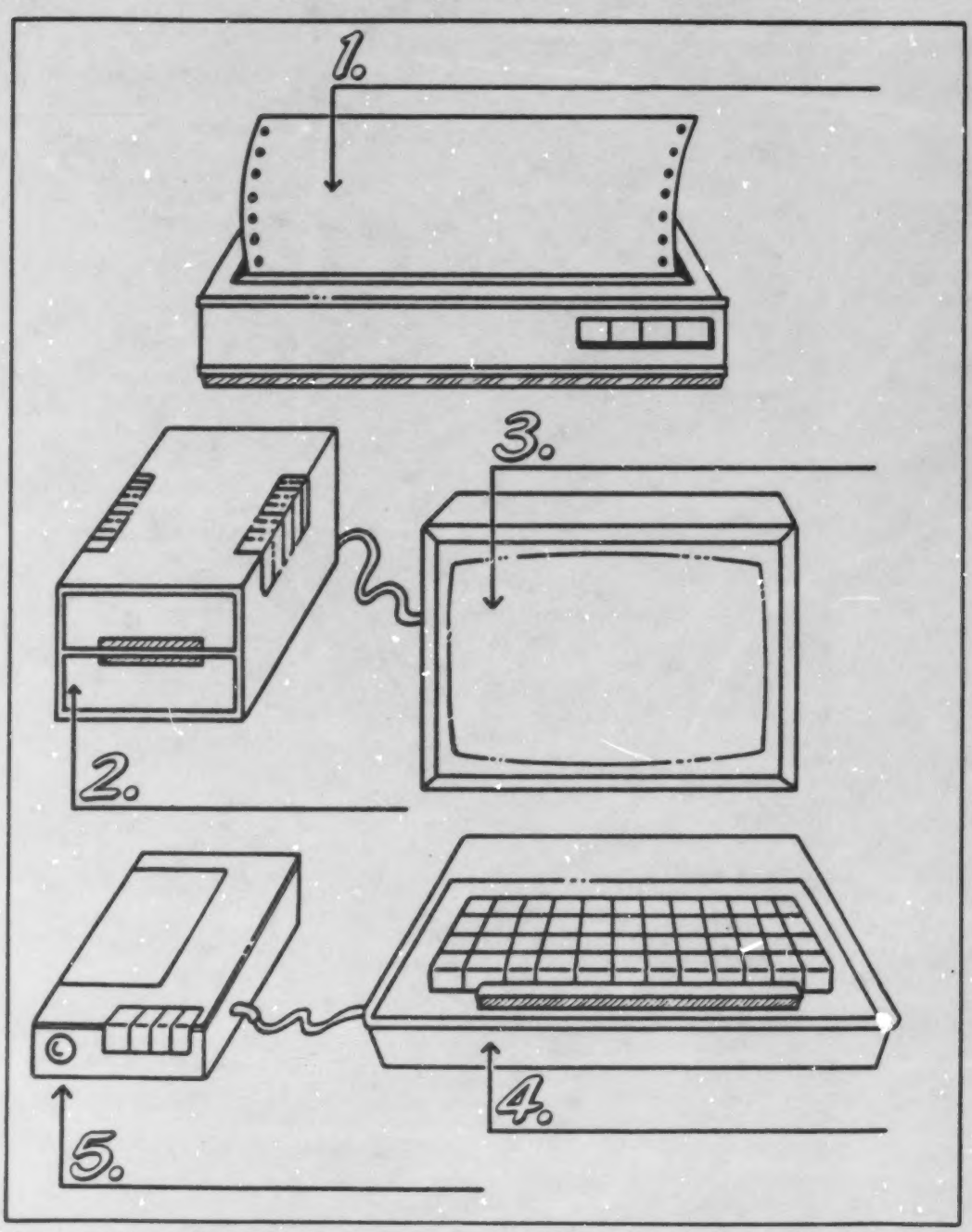
Parts of a Computer

Label the main parts of a computer.
Use these names: monitor, printer, disk drive, recorder, keyboard.



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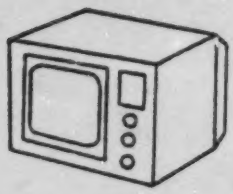
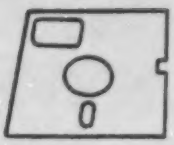
COMPUTER COMPONENTS

Print "Hardware" or "Software" in the space provided by each picture.
Try to name each item.



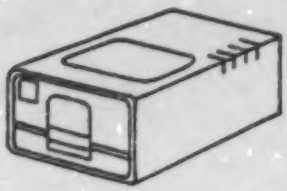
1 _____

_____



2 _____

_____



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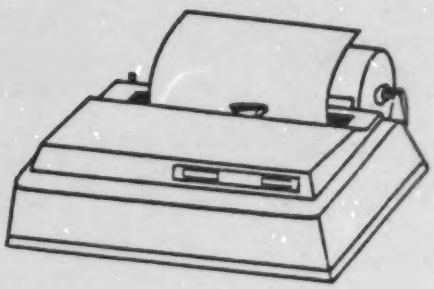

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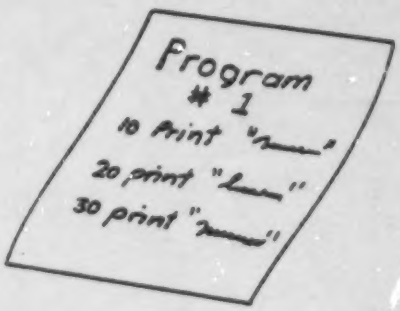

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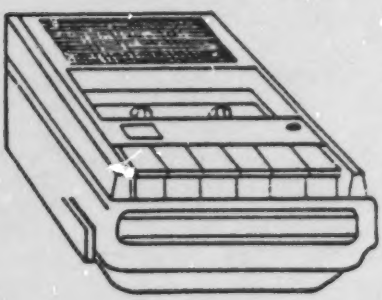

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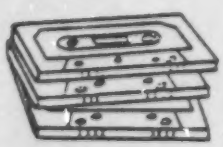

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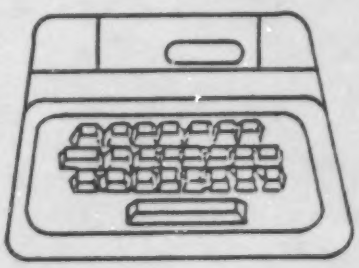

9 _____

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Use with the filmstrip: How Computers Work A516-2

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Computer Careers Answer Key

1. C, Inventory control

2.A, Checkbook balancing

3. E, Menu planning

4. F, Computing taxes

5. D, Classroom records

6. I, Scheduling a trip

7. H, Drawing a plan

8. J, Diagnosing symptoms

9. G, Searching for court decisions

10. B, Word processing

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Computer Operator's Test Answer Key

1. C
2. C
3. C
4. A
5. C
6. C
7. B
8. A
9. C
10. B

106

VOCABULARY FLASH CARDS

107-125

problem solving

the work that a computer does

store

put information or data into the computer

retrieve

get information or data out of the computer

process

work on information or data in the computer

input

information and instructions given to the computer

processing

working with the information and instructions

fed into the computer

output

the results or information given out

when the computer is finished processing

memory

a storage space where information is stored

RAM

Random Access Memory

ROM

Read Only Memory

control unit

directs the instructions and flow of information

through the computer

printer

a computer output device

hardware

computer equipment

the actual machinery of the computer

software

computer programs

instructions and information used by the computer

FORTRAN

a computer language used by scientists

BASIC

a computer language used most often by people in schools

Beginning All-purpose Symbolic Instruction Code

LOGO

an easy computer language used in schools

PASCAL

a computer language used in science, mathematics, and engineering

COBOL

a computer language used in business

HARDWARE AND SOFTWARE FLASH CARDS

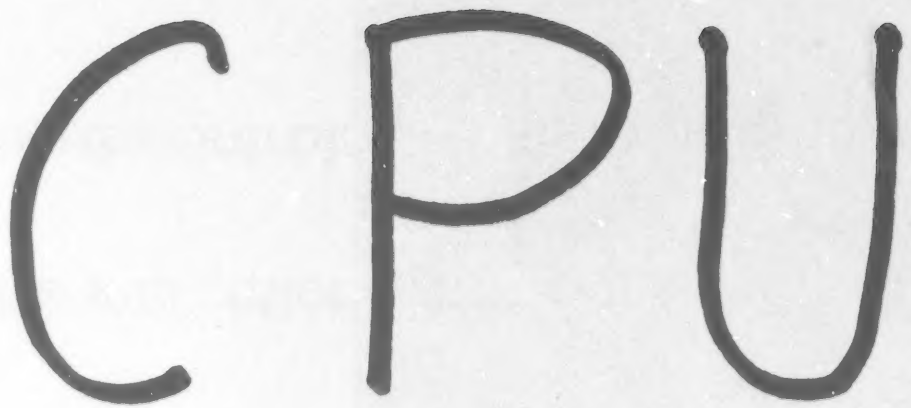
126-143

monitor

a computer output device

hardware

191


CPU

Central Processing Unit

interprets insructions, performs work as directed,

and controls the input and output

hardware

program

information and instructions fed into the computer

software

disc

computer input device

software

disc drive

computer input device

hardware

tape recorder

computer input device

hardware

cassette

computer input device

software

computer

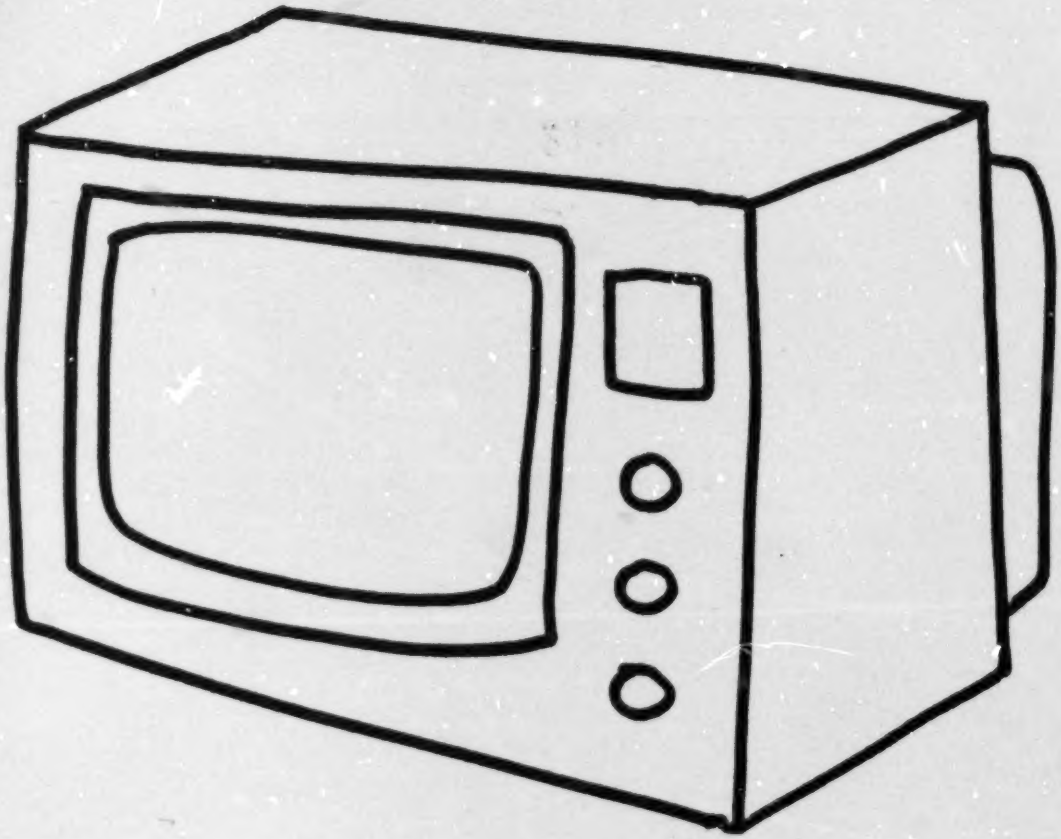
a problem solving tool

hardware

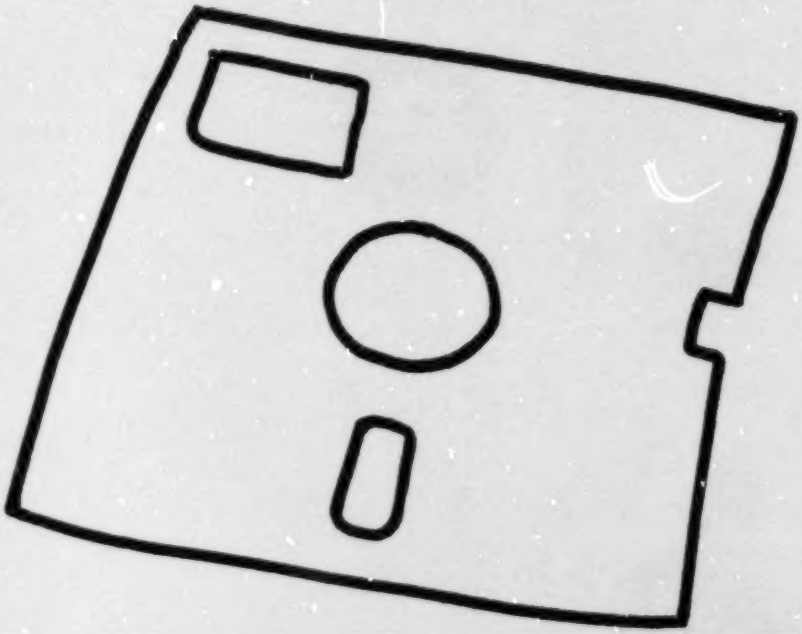
tool

something that helps do work

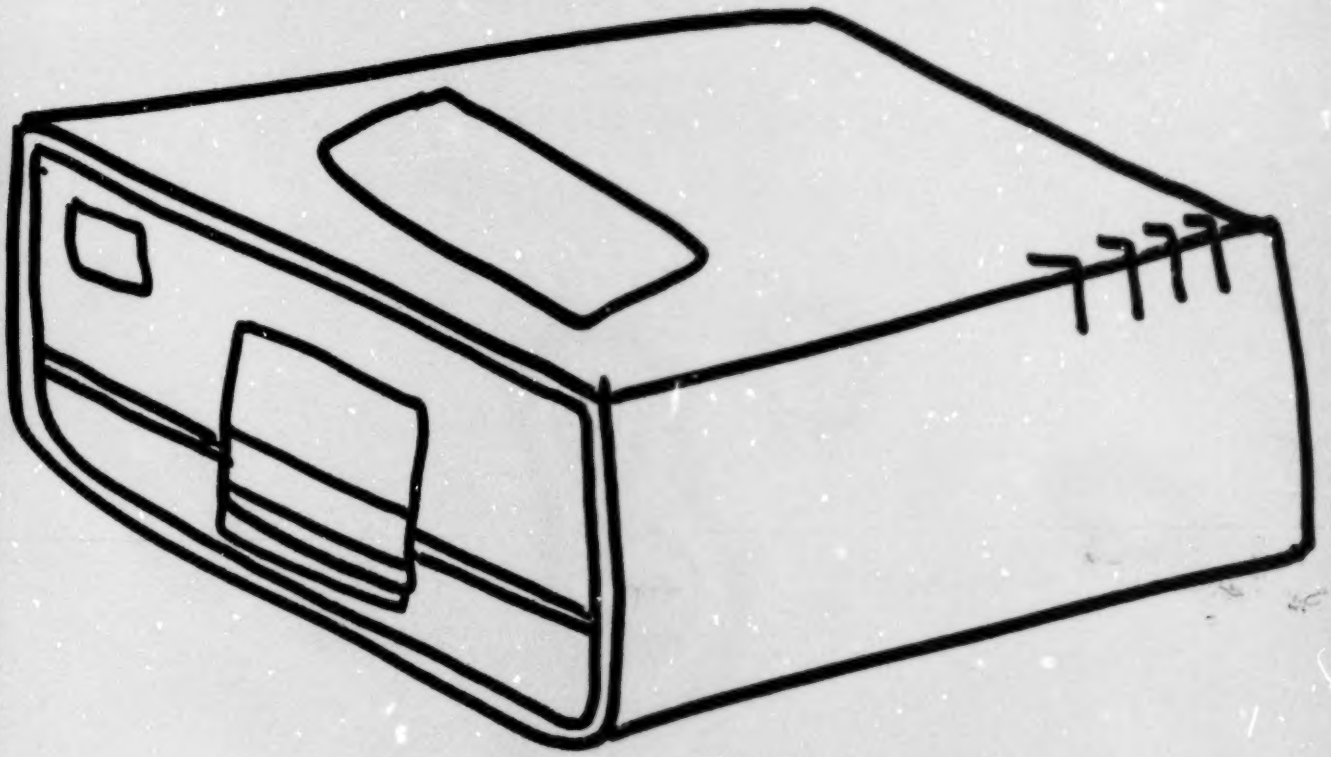
software



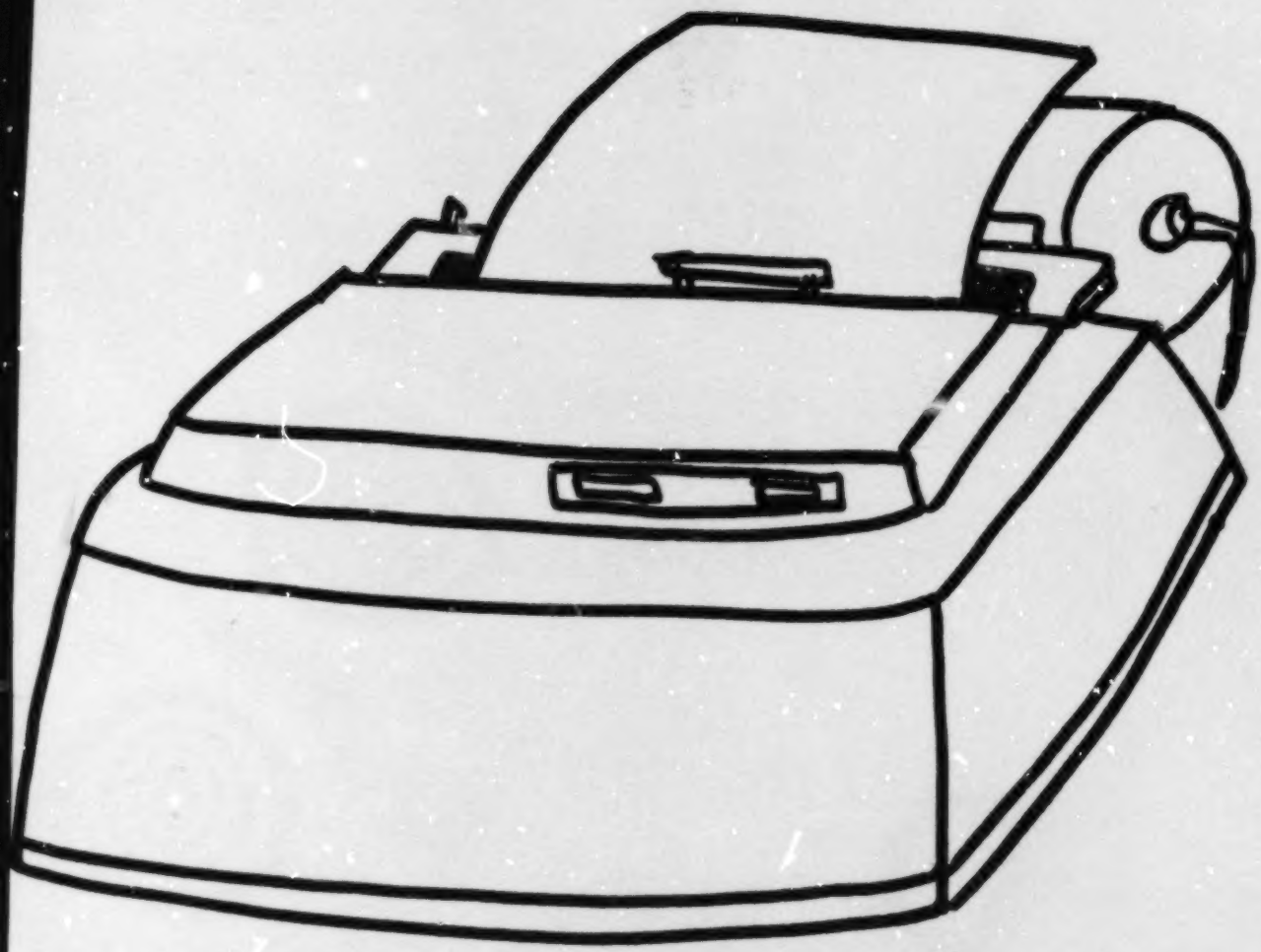
hardware



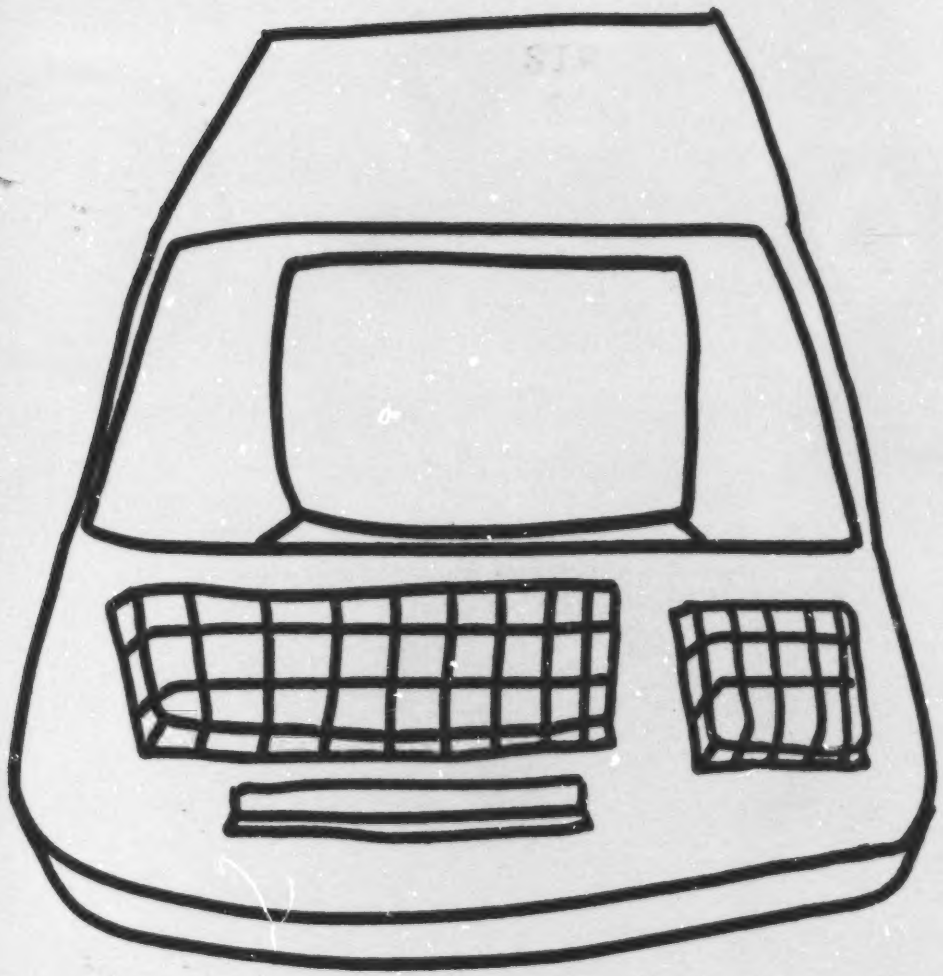
software



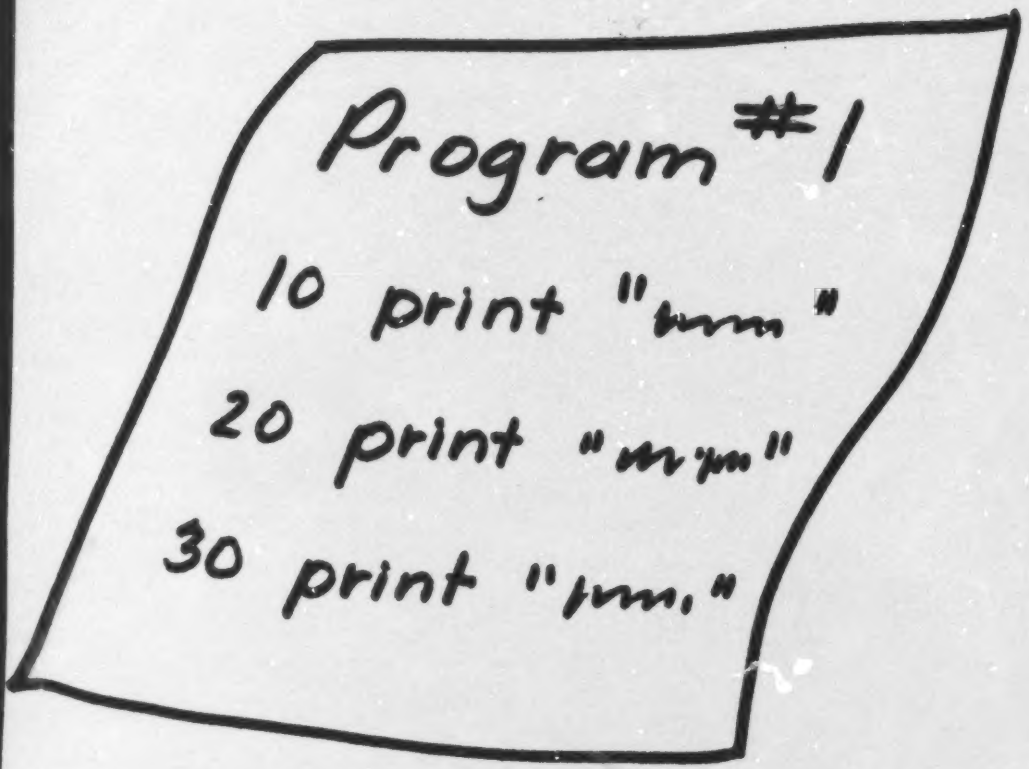
hardware



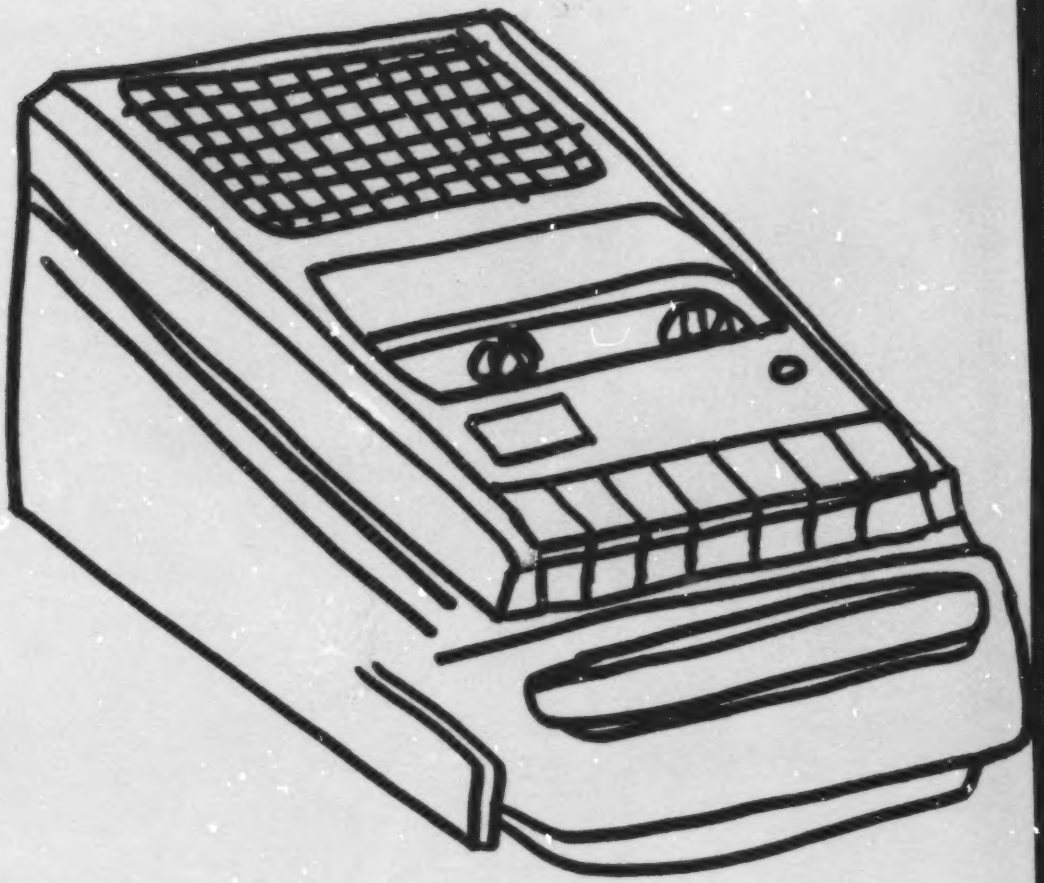
hardware



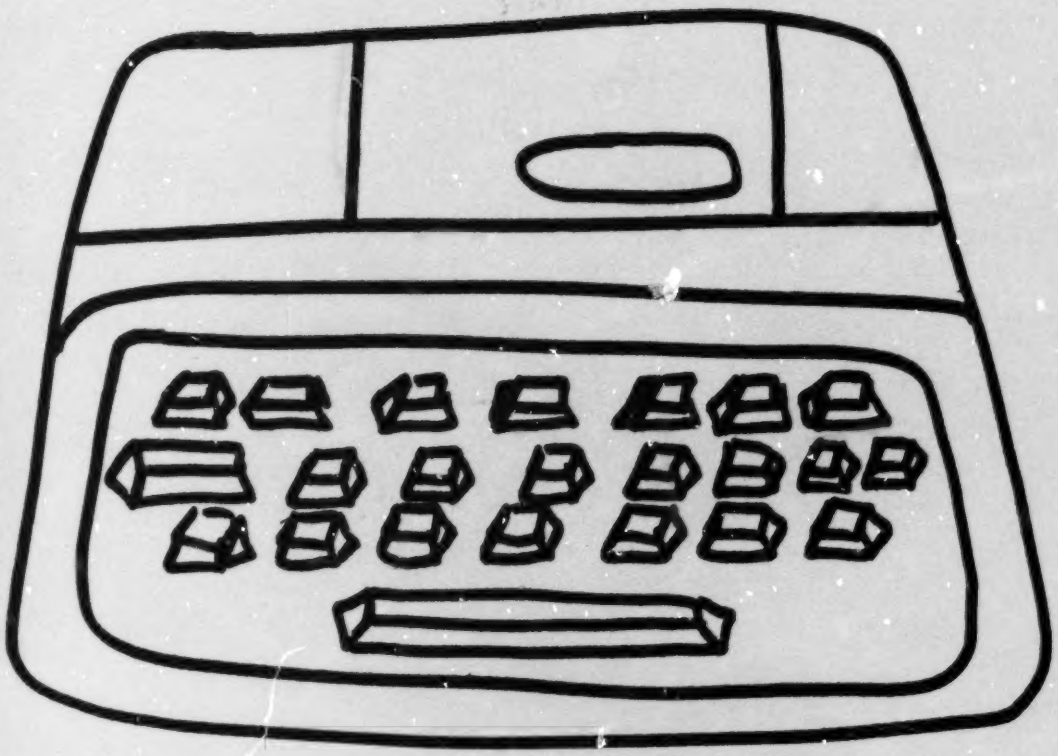
hardware


Program #1
10 print "hmm"
20 print "mmm"
30 print "hmm."

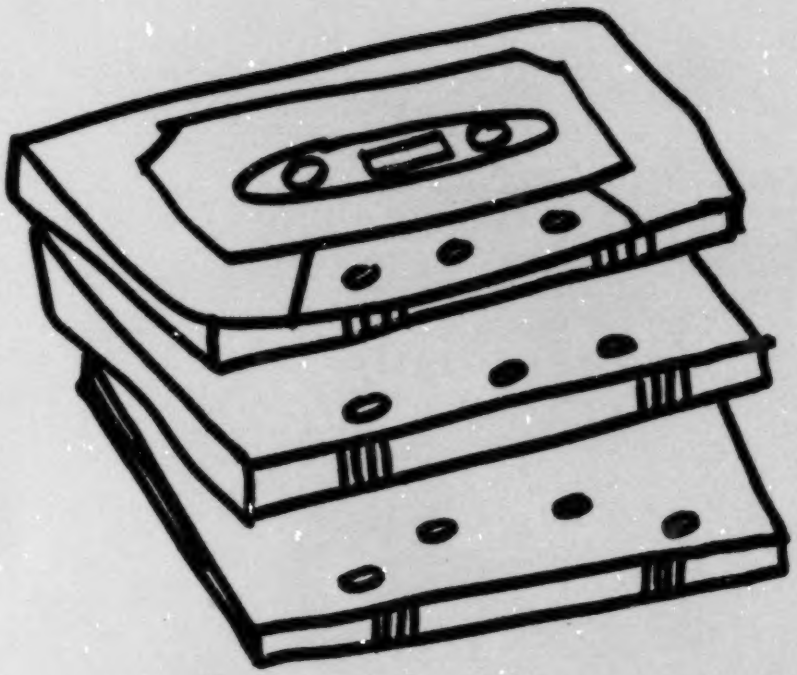
software



hardware



hardware



software